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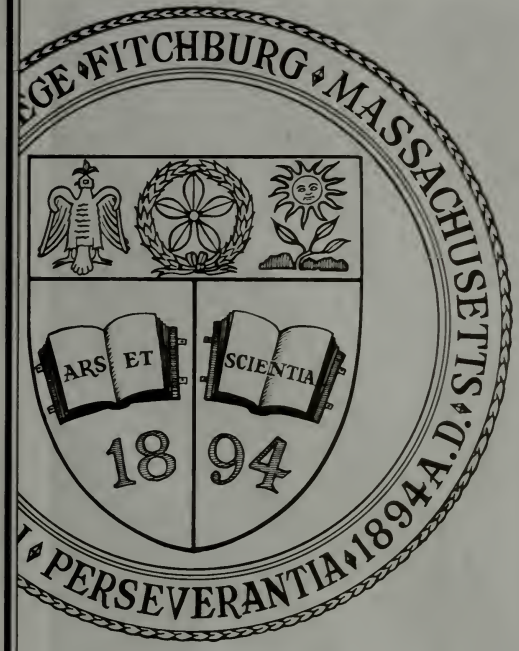
1995

Fitchburg State College Undergraduate Catalog



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Fitchburg State College Undergraduate Catalog

Our Commitment To You

This catalog is your comprehensive guide to life at Fitchburg State College, both curricular and extra-curricular. You should read the introductory sections carefully, and discuss any questions you may have with your advisor or the staff of the Advising Center. For answers to specific questions on such matters as tuition, financial aid, grading policy, and non-academic matters, you should visit the appropriate office on campus.

The most important function of this book, however, is to outline the various requirements you will need to fulfill in order to graduate. You will need to select those courses that satisfy the requirements of both the College's Liberal Arts and Sciences Program and those necessitated by your choice of major. We suggest that you consult this catalog prior to selecting each semester's courses, reviewing the requirements for your major and reading the course descriptions before meeting with your advisor.

During the first week of classes in any course, you must make a decision about continuing in it. The catalog outlines the process for both dropping and adding courses, and the effect your decision may have on your grade point average and graduation schedule. We strongly urge you to review those sections pertaining to College and departmental academic requirements as you prepare for your junior and senior years, so that you are certain of your progress.

Remember: read, consider, discuss, decide, and act–that's how to use this catalog best!

Accredited By

Fitchburg State College is accredited by the New England Association of Schools and Colleges, Inc., a non-governmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions offering post-graduate instruction.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited school or college is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the status of an institution's accreditation by the New England Association should be directed to the administrative staff of the school or college. Individuals may also contact the Association:

Commission on Higher Education
New England Association of Schools and Colleges
The Sanborn House, 15 High Street
Winchester, Massachusetts 01890
617/729-6762

The College is also accredited by the National League for Nursing; the Council for Standards in Human Service Education; the American Medical Association's Committee on Allied Health Education and Accreditation in cooperation with the National Accrediting Agency for Clinical Laboratory Sciences.

Approved by

The National Association of State Directors of Teacher Education and Certification; the Interstate Certification Compact in Certification of Educational Personnel; the State Board of Registration in Nursing.

Member of

The American Association of Colleges of Teacher Education, the College Entrance Examination Board, the Massachusetts Association of Colleges of Nursing, the National League for Nursing Council of Baccalaureate and Higher Degree Programs, Massachusetts and Rhode Island League for Nursing, the American Association of State Colleges and Universities, the International Association of Colleges and Universities, the American Council on Education, the New England Association of College Admissions Counselors, the American Association of Collegiate Registrars and Admissions Officers, and the Council of Colleges of Arts and Sciences, the Council of Graduate Schools, the North American Association of Summer Sessions, the American Assembly of Collegiate Schools of Business, and the Association of Collegiate Business Schools and Programs.

Servicemembers Opportunity College

Fitchburg State College is a fully-approved S.O.C. member, committed to assisting military students achieve their educational goals. The S.O.C. principles and criteria subscribed to by all member institutions provide the basis for a consistent and uniform approach to meeting the special needs of military personnel. The Associate Registrar of the College serves as the counselor for this important program.

Affirmative Action Policy

It is the policy and commitment of Fitchburg State College not to discriminate on the basis of race, religion, color, age, gender, sexual orientation, disability, veteran status, marital status, or national origin in its educational programs, activities, admissions, or employment policies, and to comply with the requirements of Federal Executive Orders 11246 and 11375 as amended; the Civil Rights Act of 1964 as amended; Title IX of the Educational Act of 1972; Sections 503 and 504 of the Rehabilitation Act of 1973; Section 402, Vietnam Era Veterans Readjustment Assistance Act of 1974; the Civil Rights Restoration Act of 1988; Americans with Disabilities Act of 1990; the Civil Rights Act of 1991; and pertinent laws, regulations, and Executive Orders, directives of the Higher Education Coordinating Council of the Commonwealth of Mass., the Commonwealth of Massachusetts, and other applicable state and federal statutes.

Inquiries concerning the application of, or compliance with, the laws and regulations prohibiting such discrimination should be addressed to Mary E. Scott, Director of Personnel/Affirmative Action, who has been designated Title IX Coordinator (Ext. 3172), or with respect to Section 504, to Steven J. Lanciani, Vice President for Facilities Management (Ext. 3118), who has been designated Coordinator for Section 504, and the Americans with Disabilities Act or the Office of the Assistant Secretary of Civil Rights, United States Department of Education, Washington, D.C.

Sexual Harassment Policy

It is against the policy of Fitchburg State College for any member of the College Community, male or female, to sexually harass another employee or student. The

College is committed to providing a working, living and learning environment that is free from all forms of abusive, harassing or coercive conduct. This policy seeks to protect the rights of all members of the College Community (faculty/librarians, administrators, staff, and students) to be treated with respect and dignity.

Sexual harassment consists of unsolicited verbal, non-verbal, and/or physical conduct which has the effect of interfering with student or employment status, or of creating an intimidating, hostile, or offensive environment. The College's Affirmative Action Grievance Procedures will serve as a system of review and resolution for both formal and informal complaints. Further information or advice may be obtained by contacting Mary E. Scott, Director of Personnel/Affirmative Action (Ext. 3172).

Privacy and Confidentiality Regulations

Privacy and Confidentiality Regulations pursuant to the Fair Information Practices Act F.I.P.A— (Chapter 766 of the Acts of 1965) are posted (together with a copy of Chapter 766 and the name of the F.I.P.A. administrator) on appropriate bulletin boards at the College. Additionally, a copy of the regulations is kept on file at the Registrar's Office.

Students should note that if any of these regulations should conflict with applicable provisions of the Federal Privacy Act of 1974 as amended, or with any regulations promulgated pursuant to said act, the provisions of said federal act or federal regulations shall control.

Human Studies Policy

Fitchburg State College recognizes the need for investigations in which human beings may serve as research subjects. The College is also cognizant of its responsibility for ensuring that the privacy, safety, health, and welfare of such subjects are adequately protected. Thus, the College has established a Human Studies Policy and Committee which reviews and approves the adequacy of protection of human subjects. A copy of this policy may be obtained in the Office of Academic Affairs.

Drug-Free Environment

Fitchburg State College is in compliance with the Drug-Free Workplace Act of 1988 and the Drug-Free Schools and Communities Act, Amendment of 1989. Information regarding these acts and the College's compliance with them is distributed to the College community each year and is also available from the Director of Personnel.

Waiver of Academic Regulations

Recognizing the inappropriateness of rigidity in endeavoring to promote its goals, the College provides for waiver procedure relative to its baccalaureate rules, regulations, and programs. All petitions of waiver of regulations begin with the Dean of Curriculum and Instruction for day students and with the Dean of Graduate and Continuing Education for graduate and continuing education students. The student should note that the justification for a waiver should be as exceptional as its granting.

The provisions of this catalog are not to be regarded as an irrevocable contract between the College and its students.

To The College Community

In this time of centennial celebration at Fitchburg State, the programs and courses contained in these pages stand as the culmination of a century's quest for excellence.

Although we were founded in 1894 to prepare teachers for the Commonwealth's schools—a proud tradition that continues to this day—our legacy now includes a broad spectrum of liberal arts and professional programs. But varied though they are, they share a history of innovation and excellence that has come to be the hallmark of Fitchburg State. They share, too, a faculty that is unwavering in its commitment to our students and unmatched in its zeal for scholarship.

We've spent a century putting all the critical tools in place—programs, faculty, facilities—so that our students need only add a thirst for knowledge and the will to succeed. It is a simple and timeless formula that has always formed the basis of our philosophy, through the ebb and flow of technological change and philosophical debate. It is what earned us our reputation as "the uncommon public college," a tradition we welcome you to as we begin our second century.

Vincent J. Mara, Ph.D.
President

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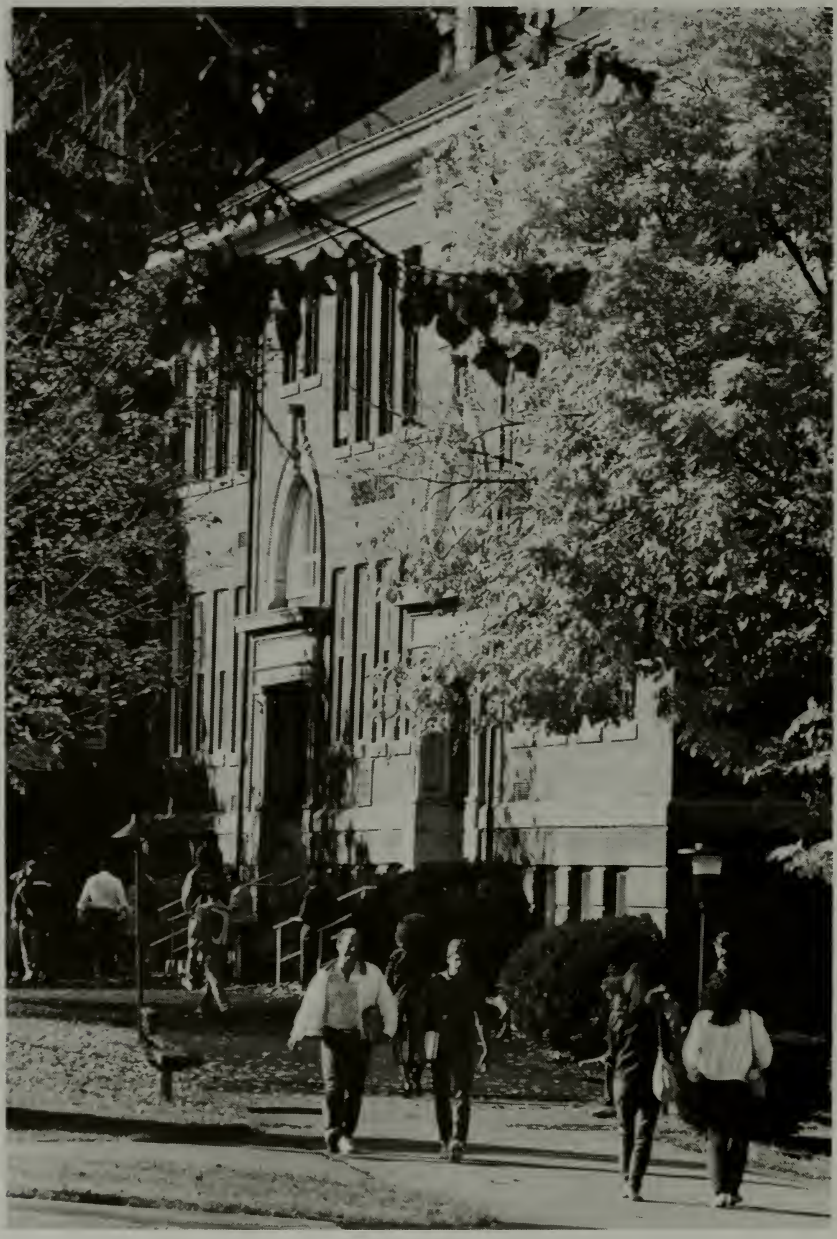
The Academic Calendar 1994-1995



Fall 1994

Sept.	4	Sunday	Residence halls open for new students 12 noon
	5	Monday	Residence halls open for all students
	6	Tuesday	President's address to faculty 10:00am followed by department meetings and student advising
	7	Wednesday	Classes begin 8:30am
	14	Wednesday	Final day for dropping courses
	15	Thursday	Final day for adding courses
Oct.	6	Thursday	U. S. and Mass. Constitution Examination
	7	Friday	Final day for making up Incomplete Grades
	10	Monday	**Columbus Day**—NO CLASSES
Nov.	2	Wednesday	Final day for withdrawal from classes without penalty
	11	Monday	**Veteran's Day**—NO CLASSES
	17	Thursday	U.S. and Mass. Constitution Examination
	23	Wednesday	Thanksgiving recess begins 3:30pm; Residence halls close 5:00pm
	27	Sunday	Thanksgiving recess ends; Residence halls reopen 12 noon
Dec.	9	Friday	Last day of Fall Semester classes
	12-19		Final Semester Examinations

Spring 1995

Jan.	16	Monday	**Martin Luther King Day**—NO CLASSES
	17	Tuesday	College opens; Residence halls open for all students 8:30am Departmental meetings and student advising
	18	Wednesday	Classes begin 8:30am
	24	Tuesday	Final day to drop a course
	25	Wednesday	Final day to add a course
Feb.	16	Thursday	U. S. and Mass. Constitution Examination
	17	Friday	Final day for making up Incomplete Grade from the previous semester
	20	Monday	**U. S. Presidents' Day**—NO CLASSES
Mar.	10	Friday	Spring vacation begins 4:30pm; Residence halls close 5:00pm
	19	Sunday	Spring vacation ends; Residence halls open 12 noon
	22	Wednesday	Final day for withdrawal from classes without penalty
Apr.	17	Monday	**Patriots' Day**—NO CLASSES
	20	Thursday	Honors Convocation; afternoon classes suspended 1:30pm
May	5	Friday	Last day of Spring Semester classes
	8-15		Final Semester Examinations
	27	Saturday	Commencement 10:30am–Campus Quadrangle

The College

History of the College

Established in 1894 by an act of the Massachusetts Legislature, the State Normal School in Fitchburg opened in temporary quarters in the old high school building on Academy Street. There, Principal John G. Thompson, aided by a teaching staff of three, and having a library of some two hundred volumes and an operating budget of $11,500, implemented a two-year teacher training program that had an enrollment of forty-six women. In December, 1896, the school moved into its new building, and took charge of the Day Street and Highland Avenue city buildings, which became State Schools of Observation and Practice.

Several years later, the Edgerly School opened as an eighth grade model and practice school, and in 1910, it became one of the first junior high schools in the United States. The following year, a practical arts teacher training course for men, the first of its kind in the country, was instituted, and male enrollment increased dramatically.

In 1930, the State Normal School was authorized to offer a bachelor's degree in practical arts, and in 1931, when it became the State Teachers College at Fitchburg, four-year degrees were offered in all levels of education. Formal graduate courses were added in 1937.

In 1960, the College became the State College at Fitchburg, and was empowered to award degrees in disciplines other than education. In 1965, its name was officially changed to Fitchburg State College, which today offers forty-nine undergraduate degree programs in sixteen academic departments to its 3,400 full-time and 3,500 part-time students. Its campus, which has expanded from a single structure on High Street to thirty-two buildings on ninety acres, has become the educational center for the Montachusett area, offering not only undergraduate programs for the traditional student but also degree programs for the adult learner through its Graduate and Continuing Education Division, which had its beginning in 1915 with an undergraduate summer session operated under the auspices of the State Division of University Extension. University Extension offered the Master's Degree in 1935 and offered the first evening courses in 1954.

Mission

Fitchburg State College is an institution of higher education that integrates an interdisciplinary, multicultural Liberal Arts and Sciences core program with selected strong professional and arts and science majors. Our unique educational milieu encourages development of the whole person and prepares students for careers that meet the needs of their varied communities.

This comprehensive public college is committed to providing excellent, yet accessible, and affordable life long learning opportunities in undergraduate, graduate, and continuing education. A dynamic force in New England, Fitchburg State College shares leadership and resources with and draws expertise from the Montachusett region. Valuing the diversity of the learning community, we help students become personally and professionally responsible citizens by promoting their intellectual, social, and ethical development.

Fitchburg State College's mission is that of an uncommon public college that strives to:

- Integrate high quality professional programs with strong liberal arts and sciences studies
- Promote, facilitate, and model self-reliant learning within a cooperative framework
- Stress high standards of academic, professional, and societal performance
- Provide opportunities for social and academic success to enhance self-esteem
- Foster excellence in teaching, service and research
- Provide library resources and services necessary to support the current and anticipated academic needs of the college
- Promote an atmosphere of collegiality, openness to ideas, and esprit de corps
- Support faculty and administrators with professional development opportunities
- Respond in an affirmative and creative manner to the changing character of society
- Develop a global perspective through international exchanges and programs
- Meet social, economic, technological, and environmental changes
- Support racial, cultural, and ethnic diversity in the college community
- Maintain a healthy, safe, and esthetic living and learning environment sensitive to local and global concerns

Fitchburg State College seeks to achieve its mission by:

Mutually supportive strong Liberal Arts and Sciences professional majors:

- Offering a liberal foundation that encourages multicultural and interdisciplinary courses
- Focusing on modes of inquiry within each discipline to strengthen critical thinking skills
- Providing extensive field experiences that bring together theory and practice
- Integrating technological development across the curriculum
- Educating students for participation in the world community at both the undergraduate and graduate level through academic and experiential opportunities
- Supporting undergraduate majors that complement graduate programs that, in turn, build on the strengths of our undergraduate offerings

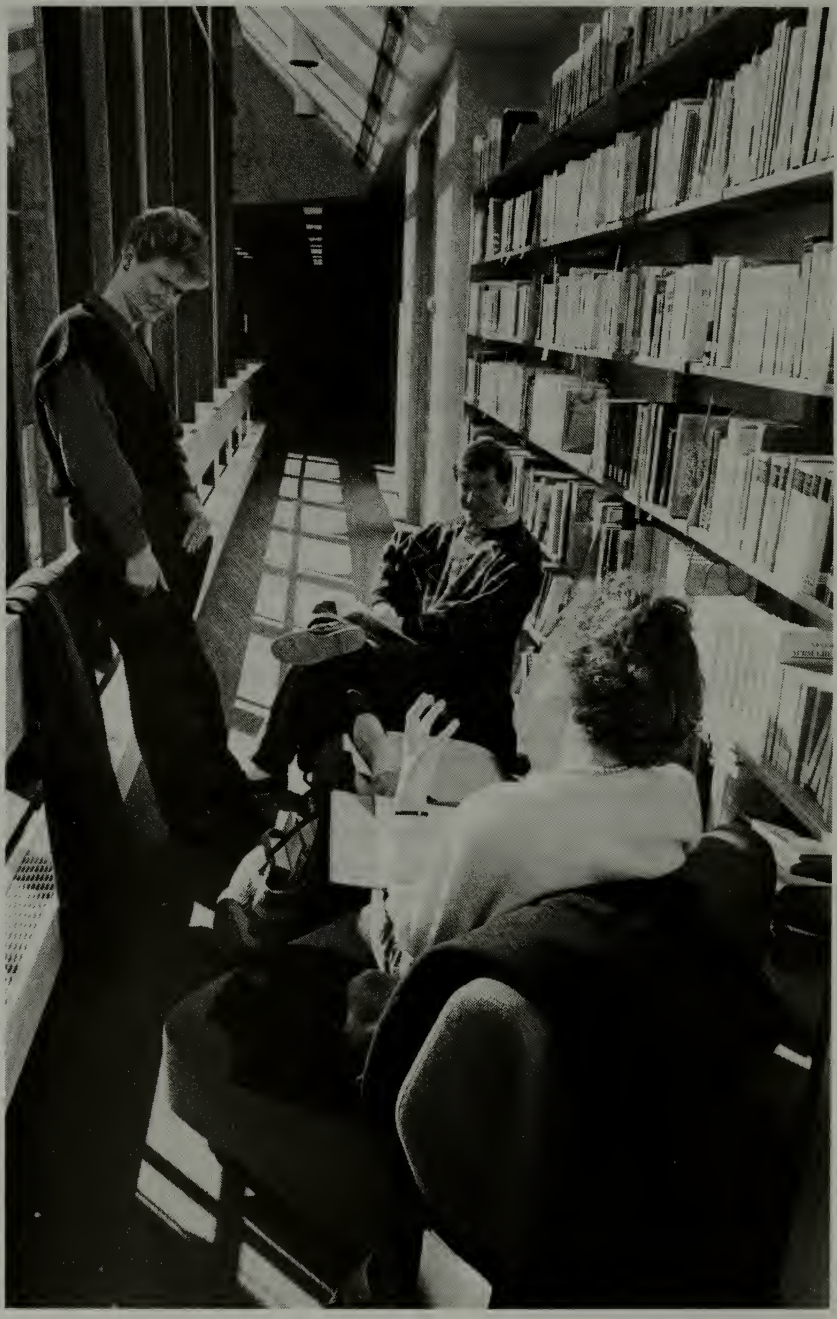
A Student-Centered Environment:

- Emphasizing creative teaching and active learning
- Providing learning experiences where students come together to challenge one another's ideas in an environment of mutual respect
- Responding to the intellectual, cultural, social, physical, and recreational needs of the residential and commuting populations
- Providing support for students, including an academic advising center, computer facilities, developmental skills and ESL programs, peer advising, tutorials, counseling, and health services
- Offering appropriate services for students with physical and learning disabilities

Commitment to the welfare of the larger community and region that it serves through:

- Collaborative efforts with school districts, the health care community, social service agencies, the business community, and higher educational institutions, particularly community colleges
- Programs for disadvantaged and gifted students, both outreach and on-campus
- Cultural events and activities that enrich the life of the community
- Faculty, administration, and student participation in community programs
- Tuition and fees that are within reach of people with moderate economic means

Campus and Facilities

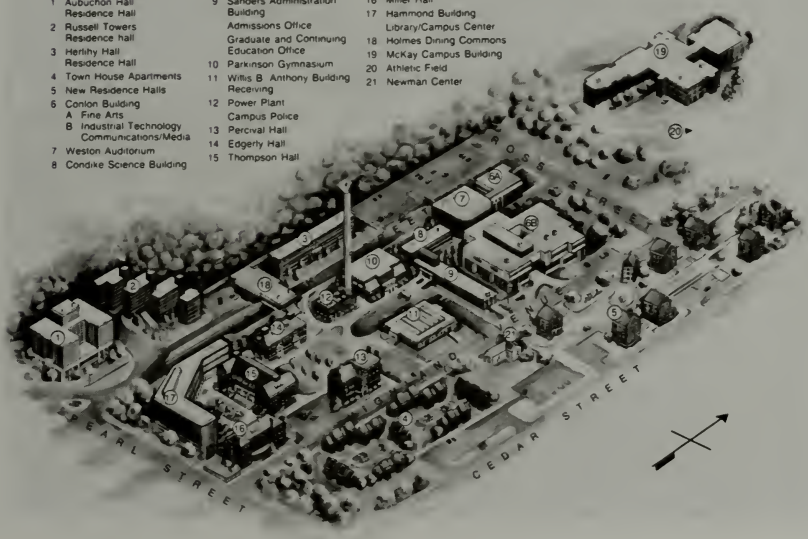


Buildings and Grounds

The 90-acre campus includes academic buildings, an administration complex, five residence units, the library/campus center, an auditorium/theater, a dining commons, a gymnasium. A short distance north of the campus is a 36-acre athletic and recreational area and McKay Campus School, a cooperative laboratory facility involving college education students and elementary children. The College also owns a 120-acre conservation area located in three neighboring communities.

Maps

1 Aubuchon Hall
Residence Hall
2 Russell Towers
Residence hall
3 Herlihy Hall
Residence Hall
4 Town House Apartments
5 New Residence Halls
6 Conlon Building
A Fine Arts
B Industrial Technology
Communications/Media
7 Weston Auditorium
8 Condike Science Building
9 Sanders Administration Building
Admissions Office
Graduate and Continuing Education Office
10 Parkinson Gymnasium
11 Willis B. Anthony Building
Receiving
12 Power Plant
Campus Police
13 Percival Hall
14 Edgerly Hall
15 Thompson Hall
16 Miller Hall
17 Hammond Building
Library/Campus Center
18 Holmes Dining Commons
19 McKay Campus Building
20 Athletic Field
21 Newman Center



The College Library

The Fitchburg State College Library, located in the Hammond Building, is a comprehensive information center dedicated to assisting in the educational development of all its students. It does this by promoting the interaction between the students and the materials in the collections. It strives towards this goal by providing materials, resources, services and staff. The library provides an on-line catalog to access the book collection of 218,000 volumes including an 11,000 volume Reference Collection and a Children's Collection of 7,500 volumes. The library subscribes to approximately 1,400 periodical titles, houses 32,170 bound volumes and 17,000 reels of microfilm. These titles and holdings are accessed through paper indexes and abstracts, an on-line index and compact Disk-ROM computer work stations. The Periodicals Department also houses the Resources in Education Collection (ERIC), a comprehensive updated Education library system consisting of 353,000 items. The Library houses an expanding Special Collections Department which includes the College Archives and the Robert Cormier Collection.

The library is open 100 hours per week, seven days a week, and provides study tables, carrels and seating on all four floors. Service for the collection is provided by eight professional librarians, who assist at the Library Information Desk and also conduct library instruction classes for the College community. To arrange for such a session, either individually or in a group, contact the staff at the Library Information Desk (ext. 3223). The library also provides for on-line database searching, borrowing arrangements with other Massachusetts academic libraries, and inter-library loans. Semester hours, as well exam hours, intersession hours and summer hours are posted.

Campus Center

The Campus Center, also located in the Hammond Building, is a haven for the commuter and residents students. The Center's facilities include the campus information center, art gallery, the craft center, the College bookstore, and the post office. Meeting and function rooms are located in the Campus Center which also houses the Student Government Association, the *Strobe*, and the Alumni Association. All facilities have been designed for easy access by people who are physically challenged.

The College Computer Center

The Fitchburg State College Computer Center has facilities to service the general administrative, educational, and research needs of the campus. Several major units of equipment are housed together in the Edgerly building to satisfy these needs. A CDC Cyber-932-32 Mainframe services the administrative computing needs of the college, processing at times thousands of queries and reports each day. A DEC VAX 8530 serves as a central locus for Faculty, Students, and Staff. It provides an enhanced environment for many Computer Science applications as well as providing electronic mail capabilities for the campus at large. Connected to the VAX are 44 interactive terminals and a line printer that are primarily for academic use by students and faculty. A Micro Vax 3100, also located in the computer center, acts as an application server to the growing number of labs connected to the FSC microcomputer network. All of the systems are connected to the Massachusetts Education Computer Network in Boston, allowing access to Wide Area Networks such as INTERNET, MASSNET, NEARNET, and others.

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FSC now boasts five general-purpose microcomputer laboratories across the campus. Two are located in the McKay Campus School and consist of one lab of twenty stand-alone 386 PCs and the other 20 Macintosh computers networked together. The remaining three labs are networked together via the Micro Vax 3100 server and provide access to applications, mail, and the world via the microcomputer network. A PC lab with 30 computers and a Macintosh lab with 27 computers is located on the third floor of the Hammond Building. The third networked lab located in the bottom floor of the Edgerly building contains twenty-eight PCs. The networks allow students in one lab to access the same applications used in the other lab even if one is being used as a classroom.

Several academic departments have discipline-specific computer labs for use by students in those disciplines. These labs are located in Nursing, Education, Industrial Arts, Communications/Media, and Skills Center.

To address those students with special computing needs, FSC has installed an Adaptive Computing Lab in the Hammond building. Located on the third floor, it contains equipment needed to provide large print, Braille, voice-operated computing, talking scanners, and other software and hardware.

In addition to the central computing facilities and open labs, the Computer Science Department has additional equipment for use in that discipline. Among these are included several robot and robot-trainers, Motorola Industrial Development systems, two Truevision image-processing stations, seventy Heathkit Microprocessor trainers, ten heath ET-100 learning computers, prototyping equipment to support both analog and digital laboratories and several Microprogramming/Bit-slice Evaluation Systems. These systems allow the student to work on design experiments that would be impossible or, at least impractical, on larger computer systems. New to the department is a multi-mode UNIX network based on SUN Corporation's Sparc workstations. This provides the students with state-of-the-art systems and design equipment currently being used in industry. Students are also exposed to a variety of languages including C, Pascal, Ada, LISP, PROLOG, COBOL, FORTRAN, and BASIC, in addition to Statistical and Word Processing packages.

Resident Housing

Four campus residents halls—Aubuchon Hall, Russell Towers, Herlihy, the New Halls and an apartment complex—provide housing for more than fourteen hundred students. All residence halls are conveniently located within easy walking distance of classrooms, offices, the library, computer laboratories, auditoriums and the campus center. Holmes Dining Commons is situated adjacent to the residence halls, providing meals for all residence hall students.

Athletic Facilities

Parkinson Gymnasium contains volleyball courts, basketball courts, a weight room for training/conditioning and the office of the Certified Athletic Trainer. McKay Campus School gymnasium is used for intramural activities.

Outdoor athletic facilities, located at the Robert Eliot Complex on Pearl Hill Road include fields for baseball, field hockey, football, soccer and intramurals; a chem-turf track; tennis courts and outdoor basketball courts which double for street hockey.

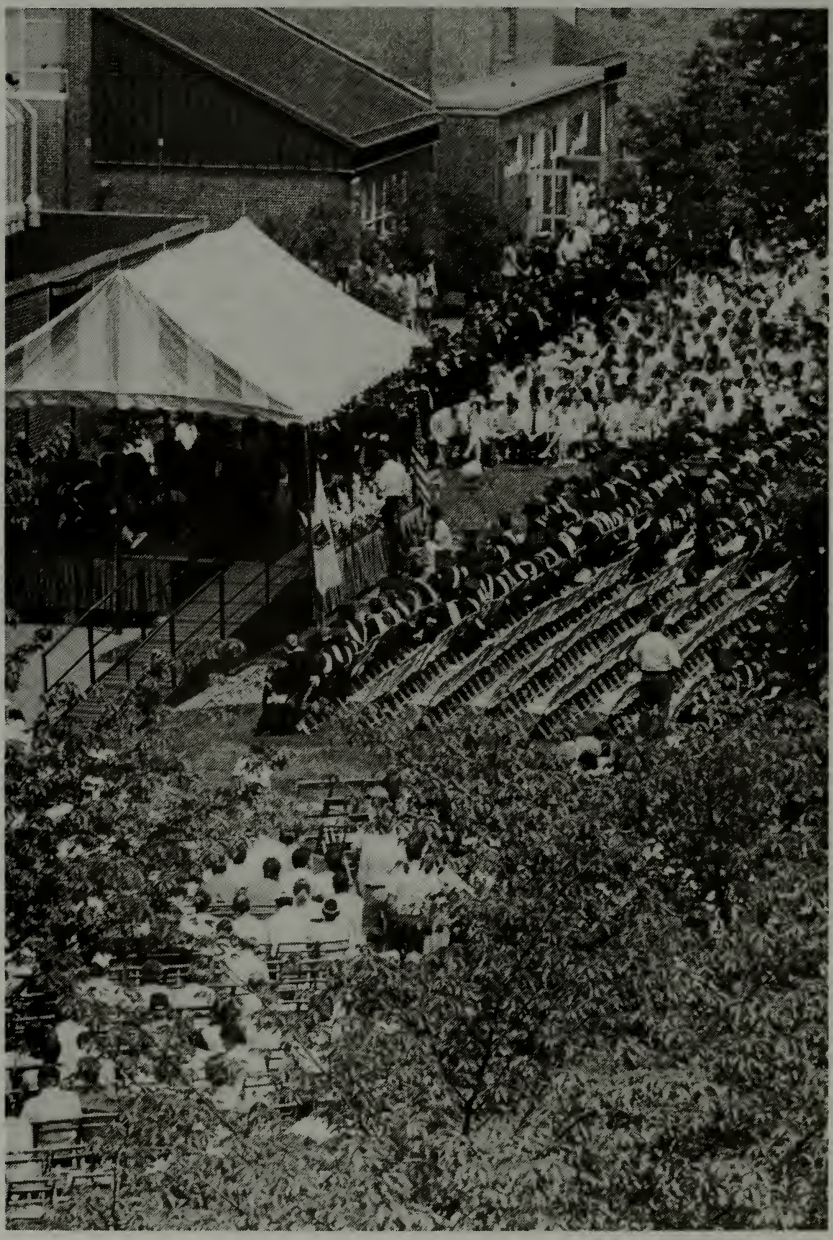
All ice programs are held at the George Wallace Civic Center.

The Department of Athletics is located in the Anthony Building.

Outdoor Recreation in the Montachusett Area

The Outing Club and the Campus Center encourage a number of outdoor activities which take advantage of the College environment. Mt. Wachusett offers some of the best skiing in Massachusetts, and is only minutes away by car, as are river rapids for white water rafting. Mt. Monadnock is less than an hour away; from its peak the hiker can gaze at a panorama that stretches from Boston to Mt. Washington and beyond. State forests in the area offer facilities for picnicking and camping, as well as lakes, ponds, and streams for fishing and swimming. All in all, the Montachusett area has some of the best recreational opportunities in the Commonwealth, and they're all at the disposal of the Fitchburg State College student.

Undergraduate Admissions



Fitchburg State College welcomes applications from all individuals seeking a quality college education: whether the traditional college applicant fresh out of high school, or one of that fast-growing group, the non-traditional student, returning to college after a hiatus of several years; whether Fitchburg State is the first college you've ever applied to, or you're seeking to transfer from a community college, a junior college, or another four-year institution; whether you're from Bolton, Boston, Bangor, or Bangkok—we invite your interest in our school. Fitchburg State endeavors to offer admission to those students whose secondary school and/or college records and backgrounds offer the promise of a successful and satisfying undergraduate experience. Each applicant is considered individually, and the decisions of the Committee on Undergraduate Admissions are based on many factors.

General Policy

Fitchburg State College adheres to the admissions requirements which specify applicants should complete a College Preparatory program in high school. Meeting these requirements, however, does not guarantee admission. Taken into consideration are: school records; rank in class; scores on the Scholastic Aptitude Tests (SAT); letters of recommendation from the applicant's secondary school guidance counselor and instructors; and extracurricular activities. Particular emphasis is placed upon the applicant's school record and class rank. The College uses an eligibility index for admissions based upon both high school rank and SAT scores to determine an applicant's admissibility. A low SAT score, for instance, may be offset by a high class rank. (Fitchburg State College supports the efforts of secondary school officials and governing bodies to have their schools achieve regionally-accredited status to provide reliable assurance of the quality of the educational preparation of its applicants for admission.)

Undergraduate applications are accepted beginning in October. All applications and supporting credentials should be received by March 1st for freshman candidates, and April 1st for transfer candidates for fall admission. Applications and credentials should be received by December 1st for admission to the spring semester.

Students who have decided to attend the college will be asked to pay an advanced tuition deposit. This non-refundable deposit is $135.00 for resident students and $85.00 for commuting students.

Campus Visits

The Undergraduate Admissions Staff believes that all applicants should visit the Fitchburg State College campus, and is, therefore, pleased to offer a variety of visitation programs. Daily student-guided tours are conducted Monday through Friday at 11:30am and 2:30pm. Our *Fridays at Fitchburg* program provides the applicant and parents with a comprehensive view of the College. The Friday program includes a multi-media presentation, campus tour, inexpensive lunch, and the opportunity to talk with faculty. The *Saturday Information Sessions*, an alternative visitation program, offer individual interviews, an information panel, and a tour of the campus. *Transfer Information Day* focuses on the particular concerns of the transfer student (e.g., credit transfer, graduation requirements, financial aid). *Access Day* assists disadvantaged students in learning more about the college and the application process.

Information concerning any of these visitation programs can be obtained by writing or calling the Undergraduate Admissions Office:

Undergraduate Admissions Office
Fitchburg State College
160 Pearl Street
Fitchburg, Massachusetts 01420-2697
Telephone: (508) 345-2151, Ext. 3144, 3145

Applications—New Students

To be considered for admission to the College, applicants must submit the following to the Office of Admissions:

1. An Application for Admissions to Fitchburg State College. Applications may be obtained at high schools or community colleges throughout the Commonwealth of Massachusetts, or by writing directly to the Admissions Office at Fitchburg State College.
2. Completion of the following high school unit requirements: English - 4; Mathematics - 3; Foreign Language - 2; Social Studies (one must be U.S. History) - 2; Natural Sciences - 2; 3 additional units in liberal arts or physical education.
3. A transcript of the complete high school record through the first marking period of the senior year. All students must be graduated from high school or offer equivalent preparation before entrance to the College (GED).
4. College Entrance Examination Scholastic Aptitude Test (SAT) scores, and the Student Descriptive Questionnaire (SDQ). Although not required, the college welcomes the results of the College Entrance Board Achievement Tests. Many candidates present Achievement Tests in English, and applicants who expect to continue in a foreign language in College should take an Achievement Test in that language. Other Achievement Tests may be taken in the student's major field(s) of interest. Please note that the forwarding of test scores directly to the College from the Educational Testing Service in Princeton, New Jersey is the applicant's responsibility. The College's code number is R 3518.
5. A recommendation for the applicant from his or her high school principal, guidance counselor, or teacher, showing evidence of academic interest, ability, and preparation. Letters of recommendation, while not required, are helpful in the evaluation process.
6. A resume of activities if time has lapsed between high school graduation and the application process to Fitchburg State College.

Interviews are not required, but can provide the Admissions Committee with helpful information. The College encourages disabled students to discuss their situation with an Admissions Counselor to learn what accommodations can be provided by the College. Applicants who desire to have an interview or to visit the campus are invited to call the Admissions Office for an appointment.

Fitchburg State College employs a "rolling admissions" policy. Rather than notify all applicants simultaneously, we do so on a continuing basis over a period of several months, beginning in the early part of January for September applicants.

Joint Admissions with Massachusetts Community Colleges

Students in Massachusetts Community Colleges may seek joint admission to Fitchburg State College. Joint admissions students who successfully complete the Associate Degree with an overall 2.5 average in a Transfer Program, as negotiated by Fitchburg State College and the community colleges, with the approval of the appropriate academic departments, will be considered juniors at Fitchburg State College. They will not have to go through a second admission review, but merely present their appropriate credentials.

Applications—International Students

Fitchburg seeks a culturally diverse campus and welcomes applications from students from other countries.

In addition to the basic admissions requirements for new and transfer students, the international students must submit several items. The Test of English as a Foreign Language (TOEFL) is required if the native language is not English. The Test of Spoken English (TSE) may be requested if proficiency is not indicated. Finally, an official bank statement must be provided showing that sufficient funds will be available to support the student for one academic year.

These documents should be forwarded by March 1 for the fall semester and November 1 for the spring semester.

Applications—Non-Traditional Students

A non-traditional student is defined as one who does not enter college immediately after high school. The student is generally older than the traditional population and many have experience in a career, at home, or in the military.

Admissions requirements generally follow those of any new student; high school transcript, SAT scores, and letters of recommendation. SAT scores may be waived if not taken and other academic strengths are indicated. In addition, the non-traditional student should submit a resume of activities which shows life experience to further support the application.

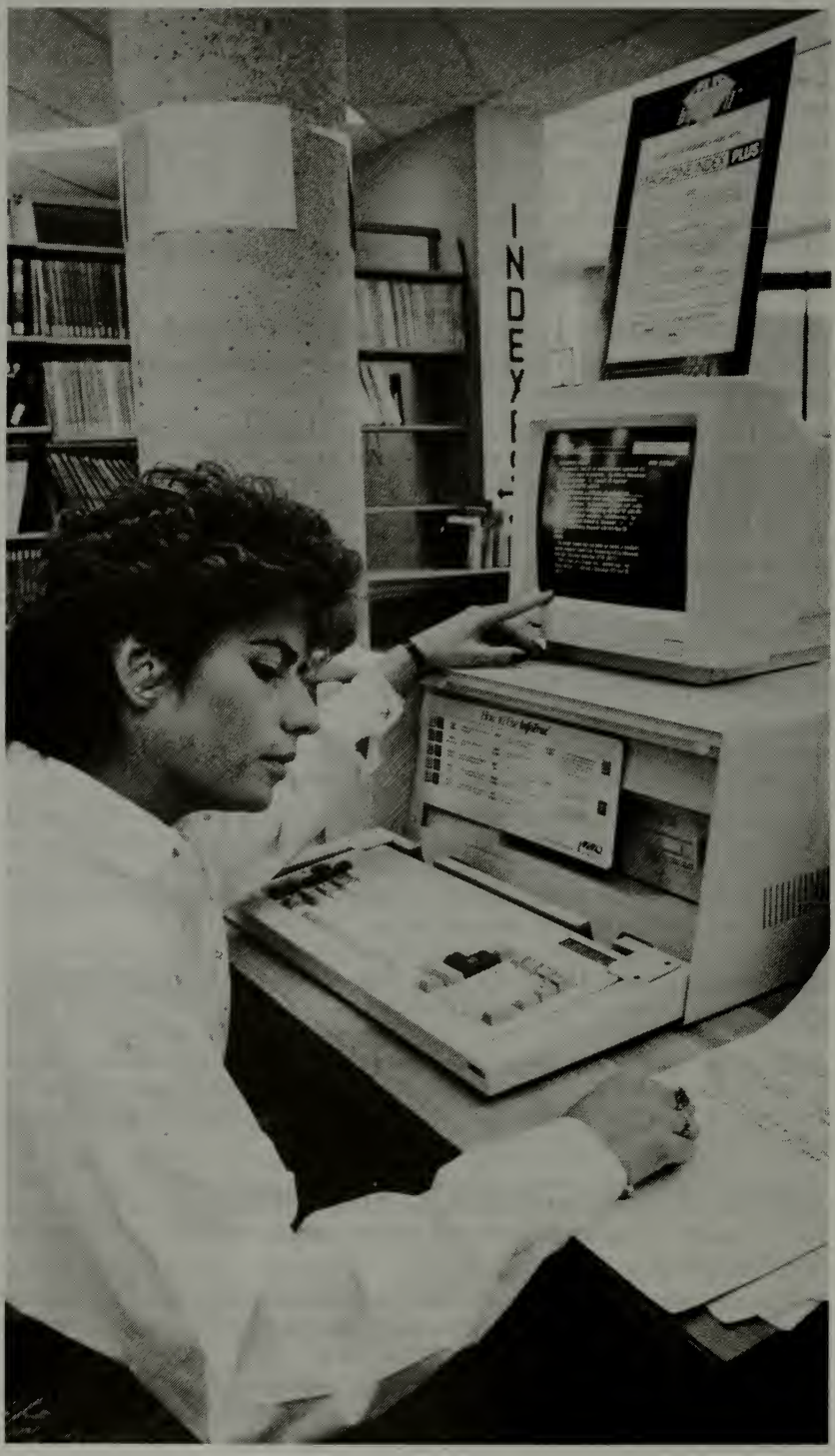
Applications Part-Time Non-Matriculating Students

A high school graduate, not a candidate for a degree, may apply for admission as a non-matriculated student. Normally such a student may enroll in a maximum of 3 courses or 11 credits. Registration for courses will be scheduled after all other degree-seeking students have done so.

Applications—Transfer Students

To be considered for admission to the College, transfer students must meet the following criteria:

1. They must have earned twelve or more semester units (eighteen quarter units) of college credit by their planned entrance date; students with less than twelve semester credits are considered "new" students.
2. To be considered as a transfer, the applicant must have a grade point average of 2.0 or better; having such an average, however, does not guarantee admission, and some programs are more selective than others.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PLUS

Additionally, the following credentials must be submitted:

1. An Application for Admission, which may be obtained by writing directly to the Admissions Office at Fitchburg State College.
2. A transcript or transcripts of all previous college work, including a statement of honorable dismissal from the last college attended.
3. A catalog from each of the previous colleges attended, with the courses the applicant has taken clearly marked.
4. A resume of activities if time has lapsed between high school graduation, further schooling, and the application process to Fitchburg State College.
5. A final high school transcript is also requested.

Transfer credit evaluation is made only after an application has been submitted, and admissibility has been determined. Transfer credits will normally be granted for work completed in other accredited colleges and/or universities, for which the student received a C or better. Full credit will be given on transferred courses which correspond with those offered at Fitchburg State College. Courses which do not fit the degree program may be counted as fulfilling the free elective requirements of the four-year curriculum. A preliminary credit evaluation will be sent with the applicant's letter of acceptance. Inquiries regarding the length of time required to complete a degree program should be addressed to the Admissions Office.

All transfer students will be subject to the provisions of Fitchburg State College's readiness policy; for further information, please refer to the catalog section headed "The Curriculum".

The grade point average from previously attended colleges and universities is dropped, and a new G.P.A. is established, reflecting the student's performance while matriculating at Fitchburg State College.

Students transferring from two-year institutions will be entitled to a maximum of two years of credit (60-64 semester hours); students transferring from baccalaureate level institutions may be entitled to more, but they may not transfer more than fifty percent of the total credit hours required in their major, and they must complete a minimum of forty-five credit hours in residence in order to receive a degree from Fitchburg State College.

For some transfer students, the requirements and provisions of "The Commonwealth Transfer Compact" apply. The complete text of the "Compact" is printed following this section.

The Commonwealth Transfer Compact

January, 1990
For students transferring from Massachusetts community colleges to public colleges and universities offering the baccalaureate degree.

Section I: Requirements for Transfer Compact Status

A student shall be eligible for Transfer Compact status if he or she has met the following requirements:

a. Completed an Associate degree with a minimum of 60 credit hours exclusive of developmental coursework.
b. Achieved a cumulative grade point average of not less than 2.0 (in a 4.0 system) at the community college awarding the degree.

c. Completed the following minimum general education core exclusive of developmental coursework.

English Composition/Writing	6 credit hours
Behavioral and Social Sciences	9 credit hours
Humanities and Fine Arts	9 credit hours
Natural or Physical Sciences	8 credit hours
Mathematics	3 credit hours

The sending institution is responsible for identifying the transcript of each student who is a candidate for transfer under this compact.

Section II: Credits to be Transferred

The 35 credits in general education specified in Section I will be applied toward the fulfillment of the receiving institution's general education requirements.

A minimum of 25 additional credits will be accepted as transfer credits by the receiving institution. These credits may be transferred as free electives, toward the receiving institution's additional general education requirements, toward the student's major, or any combination, as the receiving institution deems appropriate.

Only college-level credits consistent with the standards set forth in the Undergraduate Experience recommendations are included under this Compact. Credits awarded by the sending institution through CLEP, challenge examinations, and other life-experience evaluations for course credit may be included when the community college certifies that a student qualifies under this Compact.

Section III: Credits Beyond the Associate Degree

To complete the baccalaureate degree, a student who transfers under this Compact may be required to take no more than 68 additional credits unless:

a. The student changes his or her program upon entering the receiving institution; or

b. The combination of additional general education requirements, if any, and the requirements of the student's major at the receiving institution total more than 68 credits.

Under these circumstances, transfer students will be subject to the same requirements as native students. (The term "native student" refers to students who began their undergraduate education at the baccalaureate institution.)

Section IV: Admission to Competitive Majors or Programs

If because of space or fiscal limitations the receiving institution does not admit all qualified applicants to a given major or program, the receiving institution will use the same criteria for applicants who are transfer students under this Compact as it does for its native students.

Section V: Transfer Coordinating Committee

A Transfer Coordinating Committee, convened by the Higher Education Coordinating Council of the Commonwealth of Mass., will monitor use of the Transfer Compact, resolve appeals as they pertain to the provisions in this document, and collect and analyze relevant data.

Section VI: Publication of Requirements

Each public college and university shall include in its official undergraduate catalog the provisions of the Commonwealth Transfer Compact. A transfer student may not be held to any degree requirements at the receiving institutions that were established less than three years prior to transfer admission.

Section VII: Transfer Records

The student with Transfer Compact status will be provided (by the receiving institution) a list of courses to be fulfilled to earn a baccalaureate degree, no later than the end of the semester the student enrolls. With the agreement of the student, a copy will be provided to the Transfer Officer at the sending community college.

Section VIII: Transfer Officer

The President or Chancellor of each public institution of higher education will identify an individual who serves as that institution's Transfer Officer. The Transfer Officer's responsibility will be to assist students with transfer activities.

Section IX: Student Appeals

A student who believes that the provisions of this Compact have not been applied fairly to his/her transfer application has the right to appeal.

Initially, differences of interpretation regarding the award of transfer credit shall be resolved between the student and the institution to which he/she is transferring. If a difference remains unresolved, the student shall present his/her evaluation of the situation to the institution from which the student is transferring. Representatives from the two institutions shall then have the opportunity to resolve the differences.

Absent a satisfactory resolution, differences of interpretation may be presented to the Transfer Coordinating Committee.

Section X: Effective Date

The Commonwealth Transfer Compact takes effect January 9, 1990.

New England Regional Student Program

This program enables residents of Connecticut, Maine, New Hampshire, Rhode Island, and Vermont to be considered for admission to programs of study not offered by public colleges in their home states. Applicants selected under this program are granted reduced tuition rates (50% above regular in-state tuition, rather than full out-of-state tuition). For further information, please contact the Admissions office or the New England Board of Higher Education, 45 Temple Place, Boston, Massachusetts 02111.

Tuition and Fees

All costs listed below reflect Board of Trustees policy as of January 5, 1994; they may be adjusted if voted by the Board of Trustees, or by the Mass. Higher Education Coordinating Council. Funds received for educational purposes will be applied on the basis of first funds received, first funds applied to bill.

1994-1995 Tuition Rates

In-state students ..... $1,408 per annum, $704 per semester

Out-of-state students ..... $5,542 per annum, $2,771.00 per semester

Students aged sixty or over may attend classes tuition-free, provided seating is available after the enrollment of tuition-paying students. Library and Educational Service fees are required.

1994-1995 Standard Fees

Fees listed below are on a per year basis and are payable in equal installments at the beginning of each semester except where indicated:

Application Fee, In-state
(not refundable or applicable to tuition, one time only) $10

Application Fee, Out-of-state
(not refundable or applicable to tuition, one time only) $40

Athletic Fee $108

Campus Center Fee $50

Career Services Fee (for seniors, one time only) $15

Computer Services Center Fee $30

Educational Service Fee $50

Health Services Fee $50

Health Insurance (Required only if not covered by private insurance) ... $555.00

Library Fee $20

MASSPIRG (optional) $10

Student Activity Fee $48

Special Fee $1,470

Student Teaching and Field Experience Fee (usually seniors, one time only). $75

Room and Board

Residence Hall. ..... $2,330 per annum, $1,165 per semester

19 Meal Plan ..... $1,398 per annum, $699 per semester

(Required for Residence Hall students except those assigned to the Town Houses, optional to students living off-campus)

Lunch Plan ..... $590 per annum, $295 per semester

Deposits

Orientation (Paid once at time of acceptance) $35

Tuition (Paid once at time of acceptance. Credited toward
first semester tuition fee) $50

Residence Life (Required of all students accepting accommodations; this is not refundable, but is credited against the second semester room charge. No refunds of this deposit are granted if second semester occupancy is terminated for any reason whatsoever.) $50

The above advance deposits are non-refundable.

Payment Options

All bills must be paid with either cashier's checks, money orders, bank checks, traveler's checks, or personal checks. Please Note: Any personal checks returned to us by your bank will be charged a $25.00 returned check fee and a $25.00 late payment fee. Any indebtedness to the College which becomes past due immediately jeopardizes the student's enrollment, and no such student will be permitted to graduate, or to register for a subsequent semester or summer session. Furthermore, any student who fails to pay all indebtedness to the College may not be issued diplomas, degrees, or other official statements unless otherwise mandated by law.

Fitchburg State College also has available a tuition payment plan administered directly through the Treasurer's Office at Fitchburg State College.

Insurance

A mandatory health insurance plan is required of all students taking 9 or more credits who are not covered by an insurance policy. All students who do not sign a waiver card will be billed for this mandatory insurance. The current cost of the student policy is $555.00.

Refund Policy

New students, both freshman and transfer, are assessed a non-refundable $50.00 tuition deposit which is credited toward their first semester tuition charges. If a student withdraws prior to the beginning of classes, full tuition, less the $50.00 deposit, is refunded. Returning students who have paid their tuition prior to the opening of school and who have notified the school that they will not be attending any classes will be entitled to a full refund of all tuition and fees. After the commencement of semester classes, the policy is as follows:

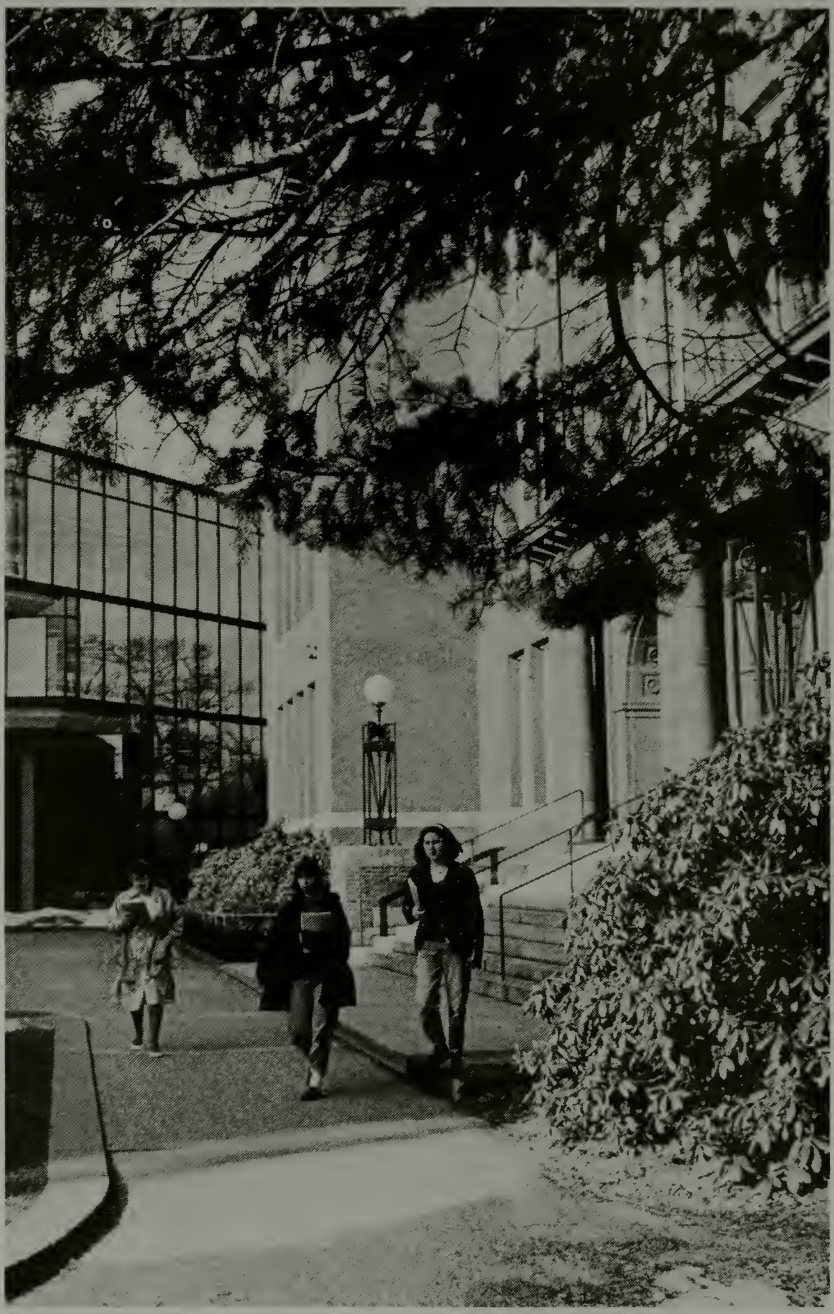
- If the student withdraws during the first week of classes, two-thirds of the tuition charge will be refunded;
- If the student withdraws during the second week of classes, one-half of the tuition charge will be refunded;
- If the student withdraws during the third week of classes, one-third of the tuition charge will be refunded;
- A student withdrawing after the third week of classes is not entitled to a refund.
- The refund policy for first time attendees on federal financial aid may vary.

Fees are not refundable after the start of classes. Room and board charges are refundable based upon the occupancy agreement and the meal contract respectively.

Personal Property

Fitchburg State College has no liability and is not responsible for the loss or damage to any personal property for any reason.

Financial Aid



Fitchburg State College will attempt to award financial assistance to any academically qualified student whose family and/or personal resources are insufficient to meet College costs. The premise of financial aid is that parents and students are primarily responsible for meeting College costs; however, when those costs exceed the amount individuals or their families may be reasonably expected to contribute, financial assistance is appropriate.

Eligibility

Although Fitchburg State College does not set the standards to measure financial need, the Financial Aid Office will help students and their families with the process of applying under Federal and State guidelines.

Many factors enter into the formula used to determine financial need. No student should assume that he or she is ineligible for financial aid. All students, regardless of family income, are encouraged to apply.

A student's eligibility for financial aid is based on financial need, which is the difference between educational costs and the family or personal contribution toward those costs. Educational costs vary according to the individual circumstances of the student, and include such items as tuition, fees, room and board, books, supplies, transportation, and personal expenses. The family or personal contribution is determined by a nationally used formula known as Federal Methodology (FM), which factors in such items as income, assets, number in household, number in college, age, taxes, and other miscellaneous data. Thus, like the cost, the amount of family contribution may vary, even between households having approximately the same income.

Satisfactory Academic Progress

While determining and documenting financial need is of primary importance to all financial aid applicants, no less important to the returning student is the matter of satisfactory academic progress (SAP), that is, measurable progress toward the completion of a course of study according to the standards of Fitchburg State College. Students must maintain an appropriate cumulative grade point average according to the regulations listed under Academic Standing in the Academic Policies and Procedures of this catalog.

Students must also successfully complete a minimum of 24 credit hours during each academic year at Fitchburg State College. For SAP purposes, the academic year runs from September through August.

Students are solely responsible for maintaining their academic progress; those who have not done so will be notified of their ineligibility for financial aid during the award letter process. Special circumstances may be heard by the Dean of Curriculum and Instruction.

For students not following a continuous four-year plan of study, the policy can be equated to successful completion of 12 credits for each full-time semester, successful completion of the number of attempted credits for each part-time semester, and a 2.0 cumulative grade point average after completion of 48 credits. Full-time students who are considering dropping below a 12 credit load should consult the Financial Aid Office regarding how the SAP policy will affect their financial aid.

Students who have been denied financial aid because they were not making Satisfactory Academic Progress may again receive aid the semester after attaining Satisfactory Academic Progress.

The Application Process

Financial aid funds are awarded on a first-come, first-served basis, according to demonstrated financial need. To receive priority consideration, all application materials must be received in the Financial Aid Office by March 30th prior to the academic year in which the applicant will be attending college. Applications are accepted and processed after this deadline; however, late applications may be denied as a result of all available funds being committed to on-time applicants.

The Free Application For Federal Student Aid (FAFSA), which may be obtained from the Financial Aid Office or from the guidance department of most secondary schools, should be completed and mailed to the Central Processing System (CPS), **between January 1st and February 15th prior to the academic year in which the applicant will be attending college**. The FAFSA requires four to six weeks to process.

Applicants are required to apply for the Pell Grant by checking the appropriate boxes on the FAFSA. The applicant will receive a Student Aid Report from the CPS which must be submitted to the Financial Aid Office. Additionally, all students are required to apply for State Scholarship or Grant Assistance. Once the CPS has processed the applicant's FAFSA, it will send a report to the Financial Aid Office, and a verification of filing to the applicant's home.

In addition to the FAFSA, applicants may be required to submit other documents to the Financial Aid Office in order to complete their file; please consult the Financial Aid Office at Fitchburg State College for further information.

Please remember that financial aid is not automatically renewed. It must be applied for each year!

Student Financial Aid Budgets

A student's financial aid budget is based on his or her cost of education, which includes both direct and indirect expenses. Direct expenses are those which the student pays to the college. They are tuition, fees, and room and board (for on-campus students). Indirect expenses are those over which the student has some control. They are books, supplies, transportation, personal/miscellaneous, and room and board (for off-campus students).

Direct expenses are set by the college and the Commonwealth. Indirect expenses used in the financial aid budgets are based on estimated costs for students at FSC. A typical budget for a full-time student living in a residence hall for the 1993-94 school year is below:

Tuition	$1408	
Fees	1826	
Room	2330	
Board	1398	
Books/Supplies	450	
Transportation	350	
Personal/Misc.	1555	*includes health insurance expense
Total	$9317	

Not all students will spend exactly this amount. Some will spend more, others less, depending upon their individual spending habits.

Students are awarded financial aid based on this total budget. When the money for a student's financial aid is actually received at the college, it goes first to satisfy the student's direct expenses. Once a student's bill with the college is

satisfied, the balance of his or her aid is available and may be used to satisfy any indirect expenses the student may have. The Treasurer's Office will notify the student about which aid has been received, which aid has been used to satisfy their bill, and which aid (if any) is available for their use.

Financial Aid Programs

Financial aid programs fall into three main categories: gift-aid, student loans, and work programs.

Gift Aid

Gift-aid is usually in the form of grants or scholarships, and does not need to be repaid or earned. The following programs are available through Fitchburg State College:

The Federal Pell Grant

Named after its sponsor, Senator Claiborne Pell, it is a federally-funded entitlement program designed to assist students who have exceptional need. Grants range from $400 to $2,300 for an academic year (July 1st to June 30th). All students applying for financial aid must apply for the Pell Grant.

The Federal Supplemental Educational Opportunity Grant (SEOG)

This federally sponsored program awards funds to students with extreme financial need who would otherwise be unable to attend a post secondary institution. Grants may range from $200 to $1,000 per academic year, although they are limited by the amount the College is allocated.

Massachusetts State Scholarship Programs

These programs are administered by the Higher Education Coordinating Council of the Commonwealth of Mass.

All students who are residents of the Commonwealth are required to apply for aid from these programs. Scholarships may range from $250 to $900 per academic year. Students are notified of their eligibility by the State Scholarship Office in Boston, and must complete the requirements as stated in their award letter. The Financial Aid Office verifies information and processes payments for state scholarship programs during the year.

Other States' Grants

Students from other states may be eligible to receive a grant or scholarship from their respective state. Each program has its own individual guidelines and deadlines, and students are urged to contact the appropriate agency in their state for further information.

Tuition Waiver

This is a state-funded program whereby Massachusetts residents with a demonstrated need receive a reduction in tuition. Award amounts vary, but they cannot exceed the total tuition cost for which a student is billed.

Fitchburg State College Scholarships

In addition to the gift-aid programs listed above, F.S.C. has numerous scholarships of its own. They are awarded in the spring, and are publicized via bulletin

boards and other campus media. These scholarships are administered by the College Scholarship Committee, or by the appropriate area representative, and may require that a Scholarship Application or a Financial Aid Form (FAFSA) be on file to assist in the evaluation of need. Applications are available in the Financial Aid Office.

The following scholarships are currently available:

Alumni Admissions Scholarships: available to students demonstrating academic excellence.

Alumni Legacy Scholarships: available to a student who is a parent, dependent or sibling of a Fitchburg State College alum. Priority based on academic excellence and/or financial aid.

Alumni Scholarships: available to currently enrolled students provided they are in good academic standing. Awards are based on academic merit, financial need and/or alumni relationship.

Mary F. Burnham, Mary Francis Burnham Estate Scholarships: available to students demonstrating financial need.

Stephen W. Clair Memorial Scholarship: awarded to a student who is a Geography/Earth Science major, has earned at least 30 credits, has at least a 3.0 GPA, is an active member of the Geography Club and demonstrates financial need.

Departmental Scholarships: offer a unique opportunity for upperclass students to work closely with the departmental chair in their discipline. High consideration is given to those students with a record of academic excellence and previous departmental service. Financial need is not a requirement for consideration, and decisions are made through each specific department.

Fitchburg Business and Professional Women's Club Scholarship: awarded to a full-time female student whose permanent residence is Ashby, Ashburnham, Fitchburg, Lunenburg, Townsend, or Westminster. One academic year must have been completed satisfactorily.

Presidential Free Tuition Scholarships: awarded in recognition of the scholastic achievements of entering students graduating from high schools in Massachusetts. Requirements include a combined SAT score of 1200 or higher and rank in the top 25% of the high school class.

Martin Luther King Scholarship: awarded to full-time entering freshmen and transfer students who are members of a minority group and who demonstrate academic achievement and financial need.

Annette Rose Mitchell Memorial Scholarship: awarded to a senior nursing major who has maintained a 3.0 grade point average throughout his/her four year tenure.

Parking Scholarships: available from fines collected for illegal on-campus parking, awarded to full-time students who have completed at least one semester, and who have at least one year remaining at the College.

The President's Scholars Awards: available to students who have completed a minimum of 15 semester hours at the College and have achieved a grade point average of at least 3.75.

Student Government Association Scholarships: available to sophomores, juniors, and seniors with a grade point average of 2.2 or above, and a record of student leadership.

The following Fitchburg State College scholarships are named in grateful recognition of their benefactors:

Mattie N. Antila Poetry Award: given annually to the student writing the best poem in that year's competition. The award is made possible by Lauri and Signe Sipila in memory of Signe's parents, Mattie N. and Fanny P. Antila.

Leo P. Bourke Memorial Scholarship: awarded to a full-time undergraduate who is at least a three year resident of Leominster and who demonstrates financial need.

William E. Clark II Memorial Scholarship: awarded to a student who evinces academic achievement, financial need, and the potential to succeed.

Wallace Cunningham Scholarship: awarded to a student evincing high academic achievement and a demonstrated financial need.

Henry Frank Scholarship: awarded to full-time entering freshmen and transfer students from Norwalk, Connecticut, or from within a fifteen-mile radius of Orange, Massachusetts, with a preference given to the former. Selection is based upon academic achievement.

Grace Gummo Nursing Scholarship: awarded to deserving students in the Nursing Program.

Patrick and Mary Hammond Band Scholarship: awarded to a full-time undergraduate student chosen as the outstanding member of the Fitchburg State College Band.

Kirkpatrick-Percival Scholarship: awarded to an outstanding senior Psychology major.

LeBlond-O'Sullivan Memorial Scholarship: awarded to full-time juniors or seniors with financial need and a record of service to the College.

Buddy McMurray Good Fellowship Award: given to a student whose contribution to the College is positive, salutary, and inspirational, indicative of the goals he or she set by entering Fitchburg State.

John McNaney Memorial Scholarship: available to a Chemistry Major.

Dorothy Meilinger Memorial Scholarship: awarded to seniors majoring in Special Education who have a grade point average of 3.5 or above, and a demonstrated financial need.

Flora D. Mulholland Memorial Scholarship: awarded to a Nursing major evincing high scholastic achievement and a demonstrated financial need.

Clifford Querolo Scholarship: awarded to a student in the Industrial Arts Program, or to one who intends to teach industrial, vocational, or occupational education.

M. Lilian Smith Scholarship: awarded to a student pursuing a course of study in Education.

Louis P. Shepherd Award in Creative Writing: given annually for the year's best student portfolio of creative writing. The award is named in honor of the late Louis P. Shepherd, a longtime English professor at Fitchburg State College, and made possible through a gift from Professor Shepherd's wife, Ruth, and his daughter, Rae Shepherd-Shlechter.

Daniel J. Sullivan Scholarship: available to students demonstrating financial need.

Philip J. Tardanico Scholarship: awarded to a student enrolled in either the Industrial Arts or Technology major at Fitchburg State. Criteria is academic excellence, enthusiasm for and commitment to a career in teaching, strong moral character, and financial need.

Michael Vignale Memorial Scholarship: available to a Chemistry major.

Dr. Burnham Walker Memorial Scholarship: awarded to a full-time student majoring in Biology, Chemistry, Nursing or Medical Technology. Awards are based on financial need and academic achievement.

Carl T. Witherell Scholarship: awarded to full-time undergraduate students who are Industrial Arts majors.

Xarras Scholarship: awarded to full-time undergraduate students with preference given to graduates of Fitchburg High School.

Army ROTC Program: This program offers financial aid ranging from $2,500 for two years to over $10,000 for four years. A variety of options are available to include scholarships that pay tuition, fees, and the cost of books plus $1,000 per year (tax free). Nursing students have special scholarships.

The Army ROTC Scholarship is designed to offer financial assistance to outstanding young people in the four-year Army ROTC program who are interested in the Army as a career, or in the Army Reserves as a supplemental career. The four-year scholarships are normally awarded prior to the start of the student's first year.

Three-year scholarships are available through the on-campus program. Students may participate in a non-scholarship status, and a variety of financial packages can be arranged.

For more information, contact the Army ROTC representative at 508/342-3190, 617/769-3061, or 508/345-2151, Ext. 3408.

Student Loans

Student loans are long-term, low-interest loans which come due only after graduation, withdrawal from college, or upon less than half-time enrollment. Three such programs are:

The Federal Perkins Loan- Named in honor of Senator Carl Perkins, this program was formerly known as the National Direct Student Loan (NDSL).

The current interest rate of 5% is charged on the unpaid balance of the loan, with repayment and interest accrual commencing nine months after graduation or withdrawal from classes.

All terms and conditions of this loan are stated on the Promissory Note, Truth-In-Lending Statement, Rights and Responsibilities Statement, and a sample loan repayment schedule. Provisions for deferment, postponement, or cancellation are available for some specialized areas.

Nursing Student Loan- This program is designed to assist students in furthering their education in the field of Nursing. The current rate of 5% is charged on the unpaid balance of the loan, with repayment and interest accrual commencing nine months after graduation or withdrawal from classes. Students should consult the Loan Collections Office for more information about repayment and deferment.

MA State No Interest Loan Program- The Commonwealth of Massachusetts, through the No Interest Loan Program, will provide financially needy Massachusetts residents with this zero interest, long term student loan to assist in meeting educational costs.

Stafford Loan (formerly known as the Guaranteed Student Loan)- This program enables students to apply to local lending institutions for educational loans to help meet educational expenses. If a student qualifies for a Stafford Loan based on financial need, the federal government pays the variable interest rate on the loan while the students are in school, with repayment commencing nine months after graduation, withdrawal from classes, or upon less than half-time enrollment. Eligibility is based upon demonstrated financial need. The Financial Aid Office has a list of participating lenders in Massachusetts from whom a student may request a loan application.

If a student does not demonstrate financial need, he or she may still borrow under the Federal Stafford Loan Program. This student will still receive the same low variable interest rate (not to exceed 9%), but the federal government will not make payments on behalf of the student. The student will be required to make payments on the interest on the loan as soon as the loan is made. This loan is not deferred and is not subject to the same provisions for cancellation or postponement as the subsidized Stafford Loan.

Other educational loans are available. Contact the Financial Aid Office for information on interest rates, eligibility standards, and requirements.

Student Employment

Work programs usually supplement the gift-aid and loan components of the student's financial aid package, giving the undergraduate the opportunity for "earning-while learning." Available programs include:

Federal Work Study- This is a federally funded program providing part-time on-campus employment through which students may finance a part of their educational costs. Students are paid directly on a bi-weekly basis for the number of hours they've worked. Students may work during the academic year, holidays, and the summer. Position openings are posted in the Financial Aid Office.

Fitchburg State College Employment- The College offers part-time employment on campus to its students. Students are paid according to the salary rate offered with the position. Position openings are posted in the Financial Aid Office.

Off-Campus Employment- Career Services Center has established this service to help meet the needs of students seeking part-time employment off-campus. The Career Services, located on the third floor of the Hammond Building, receives job postings from the local community, and has organized a substantial listing of various employment opportunities. Positions currently available are posted on a bulletin board in the G-Lobby of the Hammond Building. Many of these positions offer flexible hours to accommodate academic commitments.

Veterans' Education

Veterans should contact the Registrar's Office to establish eligibility for benefits, and to confirm that all the necessary paperwork has been completed. When applying for benefits, the veteran should bring the following documents to the Registrar's Office: a DD214 Form notarized by a Veteran Notary, his or her marriage certificate, and birth certificates for each dependent child. The Registrar's Office will provide the veteran with an Application for Benefits or the Change of Place of Training Form, whichever is applicable.

All veterans are urged to keep themselves informed about benefits available to them through the Veterans' Administration. Information may be obtained from:

Regional Office
Department of Veteran Affairs
JFK Federal Building Government Center
Boston, Massachusetts 02203

Vietnam veterans from Massachusetts are entitled to attend Fitchburg State College on a no-tuition basis. Additional information may be obtained from:

The Commonwealth of Massachusetts
Department of Education
1385 Hancock Street
Quincy, Massachusetts 02169

The Curriculum

At Fitchburg State College, each curriculum, or course of study, has been conceived as a guide to help students develop the intellectual skills needed to analyze, interpret, and learn from the accumulated knowledge of the past. The purpose of every curriculum is to assist students in recognizing the possibilities as well as the problems of their changing world, to instill within them a moral awareness of their responsibilities toward improving the quality of human life, and to prepare them for careers which will enrich their lives as they enrich the lives of others.

Each curriculum includes a set of liberal arts and sciences courses and courses in a major field of study. The purpose of the Liberal Arts and Sciences requirements is to develop within Fitchburg State students the sense of aesthetics, the skills for analytic, quantitative and moral reasoning, and the enhanced verbal abilities that come only through study in a variety of academic disciplines. Through study in their major field, students acquire knowledge of both the theoretical and the practical aspects of their subject; in addition to classroom and laboratory work, many major programs at Fitchburg State College include a senior year internship or other practicum experience.

Incoming Students: The Readiness Program

All first-year and transfer students will be tested or otherwise evaluated upon entrance to Fitchburg State College to determine their proficiencies in reading, writing, and mathematics. If their skills are found deficient by departmental standards, students will be required to participate in a readiness program designed to improve basic academic abilities, thus ensuring a more successful collegiate career for each participant.

Entering students who score in the bottom 25th percentile on the reading proficiency examination will be strongly encouraged to enroll in EDUC 1000, Personal Reading Improvement.

All entering students will be required to complete ENGL 0100-Basic College Writing if their writing skills are determined to be unsatisfactory and if they have no transfer credit in English Composition.

All **freshman** will be required to complete MATH 0100-Basic Mathematics I and/or MATH 0200-Basic Mathematics II, depending upon their test scores, if their mathematics skills are determined to be unsatisfactory.

Transfer students who fail the mathematics examination will not be required to take Basic Mathematics I or Basic Mathematics II unless they wish to enroll in a mathematics course at the 1000-level or above, in which case they must fulfill the readiness requirement.

These courses: ENGL 0100, MATH 0100, and MATH 0200-carry Institutional Credit only; that is, **they will not count toward graduation,** but will count toward full-time status for purposes of financial aid and athletic eligibility. Additionally, the grades received in these courses will be counted in each participant's grade point average.

Common Graduation Requirements

In order to be eligible to graduate with a baccalaureate from Fitchburg State College, the following requirements must be met:

1. All candidates for graduation must successfully complete a program entailing not less than 120 semester hours of course work with a cumulative average of not less than 2.0; additionally, candidates must possess a 2.0 average in their respective majors. All candidates for graduation must file an application for graduation with the Registrar's Office by January 1.
2. Of these 120 semester hours, 45 must be attained in residence; normally, these will include the senior year.
3. All candidates planning to earn teacher certification or provisional certification must satisfy the Constitution requirement of the Commonwealth of Massachusetts. This requirement calls for knowledge of the Federal Constitution and that of the Commonwealth. Candidates may fulfill it in either of two ways:
   a. by passing a written examination on the two constitutions, which is offered by the Social Science Department at least three times annually, and which may be taken as often as is necessary (a pamphlet on the exam and a study guide may be obtained from the College Bookstore); or
   b. by successfully completing one of the following courses—

      HIST 1400 - United States History I,
      HIST 1500 - United States History II,
      POLS 1500 - State and Urban Government,
      POLS 1000 - U.S. Government/The Federal Government.
4. ***Liberal Arts and Sciences Program*** —Of the 120 semester hours needed to graduate, candidates must spend a minimum of 60 hours satisfying the requirements of the Liberal Arts and Sciences Program, which, in addition to the Readiness requirement in English and mathematics (if necessary) and the Constitution requirement (for teacher education majors only) includes the following components:

   Writing I & II—two courses, ENGL 1100 and 1200, or their equivalent, taken at another institution;

   Health and Fitness—one course, PHED 1000, or three credit hours of Physical Education courses (for course options, please refer to the Physical Education section of the Undergraduate Catalog);

   Junior/Senior Writing—specific requirement(s) defined by the department of the student's major;

   Computer Literacy—specific requirement(s) defined by the department of the student's major;

   Speaking/Listening—specific requirement(s) defined by the department of the student's major;

   Quantitative/Scientific Cluster—four courses, chosen from among those designated as Quantitative/Scientific ("Q" symbol in schedule). One must be a mathematics course beyond readiness level; one must be a science lab course. (N.B.: four courses, regardless of whether they carry three or four hours of credit, must be completed);

Literature, Language, and Arts Cluster—four courses chosen from among those designated as Literature, Language, and Arts ("L" symbol in schedule). One must be in Literature; one must be in Arts;

Ideas and Events Cluster—three courses chosen from among those designated as Ideas and Events ("I" symbol in schedule). One must have a historical perspective;

Human Behavior Cluster—two courses chosen from among those designated as Human Behavior ("B" symbol in schedule);

Interdisciplinary—two courses designated as Interdisciplinary ("IDIS" or departmental prefix in schedule), one of which must be taken in the freshman year. These courses can simultaneously meet the requirements in content clusters;

Multicultural—two courses designated as Multicultural ("C" designation in schedule). These courses can simultaneously meet the requirements in content clusters;

Intermediate and Advanced Requirement—3 courses at the Intermediate or Advanced level in a Liberal Arts or Science discipline outside one's major.

Liberal Arts and Sciences Electives—four courses chosen from among those designated as part of the Liberal Arts and Sciences Program (will have a symbol in the LAS column of schedule).

5. ***Freshman Foundation Year***—The first year for all students is devoted to the acquisition of the essential intellectual skills, with an emphasis on critical thinking and writing. Students also develop an appreciation for the modes of inquiry that scholars use in the Liberal Arts and Sciences. Each year, the FFY will have a theme and two required books related to the theme that all students will read.

   The Freshman Foundation Year makes explicit to first year students that Liberal Arts and Sciences courses offer content and skills that are significant in the development of an educated person, and serve as the foundation for further learning in their major areas, as well as in the Liberal Arts and Sciences. Consequently, students take primarily Liberal Arts and Sciences courses in their first year:

   Freshman Foundation Year Program
   Writing I
   Writing II
   5 Liberal Arts and Sciences courses in at least 3 Clusters
   An Interdisciplinary course
   3 additional courses chosen in consultation with advisor

6. Candidates should be aware that the following restrictions apply with respect to fulfilling their Liberal Arts and Sciences requirements:
   a. No division of credits earned in one course is allowed.
   b. Credits earned toward graduation cannot be counted twice, even though courses which satisfy Liberal Arts and Sciences requirements may also fulfill the requirements of one's major course of study.
   c. Certain majors specify which courses must be taken to satisfy the candidate's Liberal Arts and Sciences requirements. Be sure to read the section pertaining to your major carefully before registering for classes.

7. Candidates are required to enroll in a major course of study, which will vary between thirty-three and sixty-three semester hours in length. Enrollment in a given major is a formal process. Most students are accepted into a major program upon admission to the College. Other students apply for acceptance after their matriculation. These students must file an application with the Registrar. While some students may remain as Undeclared Students through their sophomore year, the Registrar's Office encourages all enrollees to apply for transfer to the major of their choice as early as possible in their college careers. Application forms for most majors are available in the Academic Advising Center or from the chair of the individual department.

   Students may change their major or degree program during their matriculation; however, they must be able to meet the requirements for their new major. Some programs (e.g., Nursing) cannot accept all the applicants who wish to transfer to that field. Therefore, students should consider more than one choice when either declaring or changing their field of study. Please note that changing one's major quite often increases the amount of time required to complete the baccalaureate program.

   Programs having requirements for internal transfer are business administration, communications/media, human services, medical technology, nursing, and special education. Students capable of meeting such requirements may proceed with the application process as described above.

8. Candidates who are still short of the 120 credits required for graduation after fulfilling both their Liberal Arts and Sciences requirements and those necessitated by their major may choose from three options in completing their baccalaureate studies: a double major, an academic minor, or free electives.

   Double Major—Degree candidates may earn a baccalaureate with two majors at Fitchburg State College by satisfying the requirements of both programs. Students will be assigned an advisor in each major. Since only one degree is granted, students will select, if necessary, whether they will receive the B.A., B.S., or B.S. Ed. degree. Students receiving a B.S. Ed. **must** also complete a major in an Arts and Sciences discipline. Students considering a double major should be aware that such a course of study will probably require more than 120 semester hours to complete. Enrollment procedure for the second major is the same as for the first.

   Academic Minor—Degree candidates at Fitchburg State are encouraged to pursue other academic interests in addition to their major; since all areas of knowledge lie adjacent at some point, the exploration of a field other than one's own tends to expand personal horizons. The academic minor is an ideal way to structure such a pursuit.

   Minors are offered in art, biology, business administration, chemistry, computer science, criminal justice, economics, English, elementary education, French, geography, German, history, industrial science, interdisciplinary graphics, mathematics, music, philosophy, physical education, political science, psychology, Russian studies, secondary education, sociology, Spanish, theater, and women's studies. Although the minimum number of credits required for the completion of a minor is fifteen, the amounts vary significantly from discipline to discipline as do the kinds of prerequisites needed. Interested candidates should refer to the "Courses and Programs" section of the catalog for further information, or to the brochure, "Academic Minors," copies of which are available in the Registrar's Office or in the Academic Advising Center.

PARKINSON

Degrees Offered

Bachelor of Arts

The Bachelor of Arts is offered to students majoring in biology, chemistry, English, general studies, geography, history, mathematics, psychology, and sociology.

Bachelor of Science

The Bachelor of Science is offered to students majoring in biology, business administration, chemistry, communications/media, computer science, economics, general studies, geography, history, human services, industrial technology, mathematics, medical technology, nursing, psychology, and sociology.

Bachelor of Science in Education

The Commonwealth of Massachusetts' new teacher education regulations mandate that all teacher education students complete a major in a liberal arts or sciences discipline in addition to their Education program. After September, 1994, no student may graduate in any undergraduate Education major program without also having completed all the degree requirements for a B.A. or B.S. degree with a liberal arts or sciences major. Any student qualifying for either the B.A., B.S., or B.S.ED. degree may choose to be awarded the B.S.Ed. degree or the B.A. or the B.S. degree but only one, unless the provisions of the double degree policy have been fulfilled. Students may not matriculate only for the B.S.Ed. degree, with the exception of transfer students admitted prior to September, 1992, or students specially approved by the Coordinator of Teacher Preparation and Certification prior to 1994.

Double Degree

Students wishing to earn two bachelor's degrees at Fitchburg State College may do so by satisfying the degree requirements for both prior to receiving the second degree. They must earn 30 semester hours credit beyond the 120 hours required for the first degree.

Program Alternatives

Fitchburg State College students may take advantage of a number of options designed to help degree candidates tailor their course of studies to best suit their individual wants and needs.

CAPS: College Academic Program Sharing

CAPS allows students the opportunity to enroll in up to thirty semester hours of courses at another state college without going through formal registration procedures, thus giving them a chance to enjoy a more varied educational experience.

To take part in this program, the degree candidates must have attained sophomore status, have spent at least one semester in residence at FSC, and be in good academic standing. Interested candidates should initiate the enrollment process prior to semester registration by soliciting the approval of the chair of the department in which the student is pursuing a major (undeclared majors should contact the Registrar's Office to determine whether further restrictions apply in their case), and having received it, should file a CAPS request with the Registrar's office.

CLEP, DANTES, Departmental Examinations, and Advanced Placement

The goal of the Fitchburg State College Examination Program is to provide students with the opportunity to demonstrate, by performance on an examination, their knowledge of the material taught in college courses, and, as a result, receive academic credit. This program is useful for the traditional college student, but it is especially valuable for individuals who have had learning experiences outside the college classroom (employment experience, life experience, independent study, etc.) which may come to bear upon their formal academic training. Fitchburg State College will award up to 60 college credits through the examination program, and for individuals scoring three, four, or five on the Advanced Placement Examination, the College will grant advanced placement status and credit in the area tested. For further information on the Fitchburg State College Examination Program, please contact the Career Services Center, 3rd floor, Hammond, Ext.3151).

Honors Program

The Honors Program is a coordinated four-year program offering an enriched curriculum for the most academically able FSC students. Freshmen are invited to join the Honors Program based on their high school grades and preparation, SAT scores, and the recommendations of their secondary teachers. Sophomores and juniors are invited to join provided they have a cumulative average of at least 3.2. For further information, see "The Honors Program" in the "Courses and Programs" section of the catalog.

Independent Study

Students wishing to engage in the specialized study of a specific academic area beyond the scheduled course offerings of a given semester may do so if proper supervision by a faculty member can be arranged. Interested students may initiate this option by requesting the guidance of a professor in whose specialization they wish to study. The decision to authorize independent study and the amount of credit pertaining thereto belongs to the professor and the department involved, with final approval being given to all projects by the Associate Vice President, Academic Affairs. Usually, only three credits of independent study may be attempted in one semester; if, however, a student wants to attempt more than this, permission must be received from the Associate Vice President, Academic Affairs.

Student Teaching and Certification/Provisional Certification

In order to participate in a teacher education program, students must meet the following criteria:

- they must have received the recommendation of the majority of faculty members in their major or area of specialization;
- they must have demonstrated effectiveness in both oral and written communication skills;
- they must have successfully completed the tuberculin screening test.

The Teacher Education Council requires that each candidate for student teaching possess a 2.0 cumulative average and a 2.5 average in his or her major field of study, as each academic department defines "major field." No incomplete in any course is allowed, nor is probationary status acceptable. Furthermore, no unre-

solved failure in a candidate's major, nor any course overload during the student teaching period is permitted.

An incomplete or failure in student teaching necessitates the repetition of the course. Each student must furnish his or her own transportation to teaching assignments.

All transfer students are required to take twelve semester hours from at least three different professors within their respective departments prior to student teaching. A student convicted of a felony as defined by the courts of any state is automatically ineligible for a teacher education program. Appeals on either of these points should be directed to the Secretary of the Teacher Education Committee.

All senior education majors are responsible for checking both graduation and certification or provisional certification requirements at the beginning of the senior year. Certification procedures will be discussed at scheduled meetings early in the semester.

Division of Graduate and Continuing Education Programs

Fitchburg State's Division of Graduate and Continuing Education schedules both undergraduate and graduate-level courses. All programs are offered in the evenings:

Evening Undergraduate Degree Majors, Minors and Certificate Programs

BS in Business Administration
- Accounting
- Management
- Marketing
- Finance

BS in Computer Science
BA/BS in General Studies
BS in Occupational/Vocational Education

Raytheon Institute, (Raytheon Employees only)

BS in Computer Science
BS in Industrial Technology
- Electrical Engineering Technology
- Industrial Management
- Manufacturing Engineering Technology
- Quality/Reliability Engineering/Technology

Minors

- Psychology

Certificate Programs (Undergraduate)

Business
Computer Languages
Computer Hardware
Computer Use and Applications
Human Resources Management
Office Administration
Plastics Technology (Offered off-campus at NYPRO Inc. in Clinton Only)
Quality/Reliability Engineering/Technology (Raytheon Employees Only)

Approval Programs

Vocational Technical Teacher Approval Program

Graduate Programs

The Graduate Division offers programs of study leading to the following Graduate degrees:

Certificate of Advanced Graduate Study (C.A.G.S.)

Education
- Consultation and Peer Leadership
- Educational Leadership and Management
- Professional Staff Development

Interdisciplinary Studies

Master's Degrees

Master of Arts in Teaching

Biology*
Earth Science*
English*
History*
Mathematics*

Master of Education

Early Childhood Education*

Educational Leadership and Management

Elementary Education

Occupational Education

Science Education

Special Education*
- Teacher of Children with Special Needs (N - 9) (5 - 12)
- Teacher of Students with Intensive Special Needs

Master of Science

Communications/Media
Computer Science
Counseling
- Mental Health Counseling
- Mental Health Counseling with Certificate in Adolescent and Family Therapy
- Elementary School Guidance Counseling
- Secondary School Guidance Counseling

Management

Certificate Programs (Graduate)

Certificate in Communications/Media Management
Certificate in Educational Technology**
Child Protective Services Certificate
Fine Arts Director Certificate Program
Forensic Case Work Certificate

**Note:* Clinical options include a core curriculum which leads to certification in the field.

***Note:* Masters of Education in Early Childhood, Elementary Education, Secondary Education, and Special Education offer concentrations in Educational Technology.

Academic Policies and Procedures

Academic Policies & Procedures

These academic policies and procedures apply to all undergraduate candidates of Fitchburg State College. Authority to interpret, administer and grant exception to these policies is vested in the Vice President of Academic Affairs. Administrative action may be taken, as necessary, to ensure compliance with academic policy.

Special consideration may be given to students admitted or later identified as physically handicapped, learning disabled, or economically or educationally disadvantaged.

For the following policies, grade point average (gpa) is defined as the average of grades earned during one semester. Cumulative grade point average (cumulative gpa or cum) is defined as the overall grade average including all grades received. Averages are computed through quality points to account for credit differences as explained in Section 7.

1. General Course Requirements

All students, regardless of major, must complete the requirements of the Liberal Arts and Sciences Program, explained in detail in this catalog under "The Curriculum."

2. The Major

Undergraduate degree candidates must complete a major in one of the programs offered by the departments in addition to completing the general course requirements.

A. Students are normally admitted to a major when they enter the college. If, however, they enter as "undeclared," they must apply for and be admitted to a major prior to registering for additional courses after completing 60 semester hours of college coursework. Transfer students with 60 or more credits admitted as "undeclared" have until either October 1 or March 1 of their first semester at Fitchburg State College to declare their major. If a student who has completed more than sixty semester hours withdraws or is dismissed from a major, the student must successfully enroll in another major before being permitted to register for additional courses.

B. A 2.0 cumulative gpa and 2.0 gpa in courses in the major are the minimum requirements for both admission to and completion of all major programs. Some majors, however, may have requirements higher than a 2.0 gpa in major courses for either entrance or completion. Continuing Education programs require a separate and full application process for admission.

C. Students must make satisfactory progress in completing the academic requirements of the major (detailed under the "Programs and Majors" section of this catalog) or they may be recommended for dismissal from the major to the Vice President of Academic Affairs. Professional programs of study may also require a departmental review of each student to determine if they are qualified to continue in the major. Termination from the major may be recommended to the Vice President of Academic Affairs if the student is judged in the review process as unsuitable for the profession, regardless of academic standing. Successful completion of an academic program in any department does not obligate the faculty to recommend licensure or certification in any profession or discipline even if the candidate is awarded the academic degree.

3. Course Registration

A. Prior to course registration each semester, students must meet with their advisor to review academic progress and develop a course schedule for the upcoming semester. Students must obtain the approval of their advisor on their course selection before being permitted to register. Students who wish to register for more than 18 semester hours must also obtain the approval of the Office of Academic Affairs.

B. For the purposes of registration, students with between 0-29 credits earned have Freshman status, students with between 30-59 credits earned have Sophomore status, students with between 60-89 credits earned have Junior status, and students with 90 or more credits earned have Senior status.

C. During the first six class days of each semester, the "Add/Drop" period, students may make changes to their schedule without the approval of their advisor. Students are **responsible** for these changes and should confer with their advisor prior to making any changes that may affect their progress towards graduation or fulfillment of their major requirements. During the first five class days of the semester, students may either add or drop a course; during the sixth class day, students may only add courses.

D. Through the eighth week of the semester, students may withdraw from courses and receive a W (Withdrawn). Appropriate forms are available at the Registrar's Office and must be signed by the course instructor, the faculty advisor, and, if the student is dropping below twelve semester hours, the Academic Affairs Office. Withdrawal after the eighth week results in a grade of 0.0.

4. Course Load

A. A minimum of 120 semester hours is required for graduation in all majors.

B. The minimum course load for each semester to maintain full-time status is 12 semester hours. Full-time status is required to maintain eligibility for financial aid, varsity athletics, academic honors including Dean's List, participation in student governance, V.A. benefits, scholarships and health insurance coverage. Both day and continuing education courses are included in calculating total semester hours.

C. The maximum course load for each semester is 18 semester hours. Students registering for more than 18 semester hours (whether solely at Fitchburg State College or in conjunction with courses taken at another college) must have the permission of the Office of Academic Affairs along with their major advisor. A student with a cumulative gpa below 3.0 will normally not be granted permission to register for more than 18 semester hours. Students taking overloads without permission may be denied credit for overload courses, regardless of grades earned.

D. In order to graduate in four years, students should pursue a program of study of at least 15 semester hours per semester. Certain majors may require enrollment in specific courses or with specific course loads in certain semesters; students should be certain they understand these requirements for their major.

E. Under certain circumstances, day program students may be permitted to enroll full time for a semester through the Continuing Education programs, and vice-versa. Approval for such enrollments must be granted by the Vice President for Academic Affairs or the Dean of Continuing Education, as appropriate.

5. Grading Policy

A. The grades awarded by Fitchburg State College are: 4.0, 3.5, 3.0, 2.5, 2.0, 1.5, 1.0, 0.0, S (Satisfactory), and U (Unsatisfactory). All grades except 0.0 and U are passing grades and earn credit towards the degree.

B. A numerical grade earns "quality points" equal to the number of semester hours carried by the course multiplied by the grade. (For example, a 3 credit course with a grade of 3.0 would earn 9 quality points.) The cumulative grade point average is computed by dividing total quality points earned in all courses by total credit hours completed.

C. If a student officially withdraws from a course by the end of the eighth week of classes, a W (Withdrawn) is entered into the transcript. In this case no credit is awarded for the course and it does not affect the cumulative gpa. If the student officially withdraws after the end of the eighth week of classes, the grade of 0.0 is entered into the transcript. A waiver is sometimes granted for documented, critical extenuating circumstances.

D. An Inc (Incomplete) is given in lieu of a grade if a student has successfully completed at least 80% of the required coursework but cannot complete the rest due to illness or equivalent disability. Students must complete the required coursework by the end of the fourth week of classes of the following semester in order to receive a grade; otherwise the Incomplete is automatically changed to a grade of 0.0. An Inc (Incomplete) is not counted in determining academic status, except in cases where a specified number of semester hours must have been completed. Grades that result from the make-up of an Incomplete will not change a Probationary, Suspension or Dismissal status, nor will they count towards Dean's List or President's List status.

E. An Au (Audit) is entered into the transcript to indicate that a student has been officially enrolled in a course but has not been examined and has earned neither a grade or credit for the course. Students who wish to audit a course must record the audit designation with the Registrar's Office by the end of the Add/Drop period.

F. S/U grades are awarded only in those courses that have received departmental approval to offer these grades and have been listed as such with the Registrar. A grade of S indicates that the student has completed at least the minimum requirements for passing the course. No quality points are awarded with the S or U grade. Students who opt to receive an S/U grade in an eligible course must record this designation with the Registrar by the end of the Add/Drop deadline. Once recorded, the designation cannot be changed. (Students registered in a course designated as "S/U grade only" need not record that designation with the Registrar.)

   Students may take a maximum of one course per semester for S/U credit, and a maximum total of twelve semester hours of S/U credit towards the degree. S/U grades are not an option if the course is a requirement for a major or minor program of study, unless the course has been approved by the department as an S/U course for majors or minors. No more than two courses can be taken for S/U credit in any department, unless such courses are required by the degree program in which the student is enrolled. The S/U option may not be used to satisfy the writing course requirement or the mathematics proficiency requirement. It may also not be used to satisfy more than one course requirement for each of the Liberal Arts & Sciences clusters.

G. Courses in which passing grades have been earned may not be repeated for credit. A student may repeat only a course in which the assigned grade was 0.0, U (Unsatisfactory) or Au (Audit). In these cases, the new grade will be substituted for the original grade in calculating the student's cumulative gpa. The original grade, however, will continue to appear on the transcript. A new passing grade earned as transfer credit also eliminates the original failing grade in calculating the cumulative gpa, but the new grade is not itself calculated into the cumulative gpa.

6. Academic Standing

All courses taken at Fitchburg State College, including those taken during Intersession or Summer Session, will count in determining academic standing. Intersession courses are calculated as part of the following Spring Semester gpa, and Summer Session courses are calculated as part of the following Fall Semester gpa. Transfer credits are included in the calculation of total credits earned but the grades for transfer courses are not calculated in the cumulative gpa.

A. To be in Good Academic Standing, a student must meet both of the following criteria:
   1. Maintain an overall cumulative gpa of 2.0 or higher; and
   2. Maintain a cumulative gpa in major courses of 2.0 or higher, as well as meet any additional academic and/or other standards specified by the department of a major in which the student is enrolled. These standards must have been approved by the All College Committee, be consistent with College policy on affirmative action, and be available from the department. Approved departmental standards for continuing enrollment in majors are listed at the end of this section.

B. Students with less than a 2.0 cumulative gpa at the end of any semester are placed on Probation.
   1. Students on Probation must meet one of the following criteria in order to avoid suspension.
      a. Students on Probation who have attempted fewer than 33 semester hours must have at least a 1.6 cumulative gpa after two semesters to be permitted to continue enrollment on Probation for a third semester. Those students with a cumulative gpa below 1.6 after two semesters are suspended at the end of their second semester.
      b. Students on Probation who have attempted 33 to 59 semester hours must have at least a 1.8 cumulative gpa after four semesters to be permitted to continue enrollments on Probation for the fifth semester. Those students with a cumulative gpa below 1.8 after four semesters are suspended at the end of their fourth semester.
      c. Students on Probation who have attempted 60 or more credit hours must achieve at least a 2.5 gpa each semester thereafter while they remain on Probation. Students on Probation with 60 or more attempted credit hours who do not earn the required 2.5 minimum gpa each semester will be suspended.
   2. Students on Probation must meet with their departmental advisor prior to or within the first week of each semester to review current course load and to establish a schedule of contact for the semester. A student on Probation must use resources such as advisors, faculty, Academic Advising Center, Counseling Services, Academic Success Center, Study Skills Program, Career Services, tutoring programs, and other support systems, as appropriate.

3. Students placed on Probation for the first time will remain eligible to hold elected or appointed office, to serve on campus committees, or to be a member of an athletic team provided their academic progress is satisfactory as defined above. Any additional Probations will disqualify a student from eligibility for these activities.
4. Students who voluntarily withdraw from the College while on Probation will continue on Probation if they are readmitted.
5. For the purposes of financial aid and athletics eligibility, a student who maintains the academic standards of Probation as defined above are considered as maintaining satisfactory academic progress. (Financial Aid and Athletics have additional academic requirements probationary students must meet as well. If you are a financial aid recipient or intercollegiate athlete, please consult the appropriate office to determine your eligibility.)

C. Students on Probation who do not improve their academic performance sufficiently to be either removed from Probation or permitted continued enrollment on Probation as described above will be suspended. No student will be suspended for academic deficiencies who has not spent at least one semester on Probation immediately prior to Suspension.

   Suspended students may not enroll in any credit course in any division of Fitchburg State College for at least one semester. Following Suspension, application for readmission must be submitted by deadlines established by the Registrar each semester. Students who are readmitted after a Suspension will continue on Probation. Suspension status is not changed by a voluntary withdrawal.

D. A Dismissal results when a student, after having been readmitted from Suspension, fails again to meet probationary standards for continued enrollment. A Dismissal status results in permanent dismissal from all divisions of Fitchburg State College. A Dismissed person is ineligible to enroll in any credit courses in any division of the College except under the provisions of the Credit Elimination Policy.

7. Credit Elimination Policy

Students who leave the College and desire to return after five or more calendar years may eliminate all or part of previously earned credits from their transcripts, in units of one semester or more. If a particular semester of credit is designated to be eliminated, all credits from this semester must be eliminated. This action may be taken only once, must be requested in writing, and must have the approval of the Office of Academic Affairs. The student's major department may impose additional requirements in the student's major.

8. Withdrawal

Students who withdraw from the College, either during or between semesters, must complete a withdrawal form which may be obtained at the Students Affairs Office. Students who withdraw within the first eight weeks of the semester will receive a "W" in each course; students who leave the College after eight weeks of the semester will receive a grade of 0.0 or "U" in all their courses. Students withdrawing in good standing may apply for readmission to the Registrar before May 1 for fall semester readmission or November 1 for spring semester readmission. Readmission is not guaranteed. The Registrar will consider academic, financial, and college judicial records, in addition to space available, in determining whether to grant readmission.

9. Transfer Credit

Credit received for courses completed at other regionally accredited institutions of higher education may be transferred to Fitchburg State College and applied towards degree programs if the courses are equivalent to courses offered by Fitchburg State College or appropriate to programs at Fitchburg State College, and the grade received was at least a 2.0 (C) or higher.

Credit for courses transferred with passing grades below 2.0 (C) may be approved in exceptional circumstances or if the credits are included as part of an Articulation Agreement/Associates Degree program covered by the Massachusetts Board of Regent's Commonwealth Transfer Compact. Approval of transfer credit may be authorized by the Registrar, the Vice President for Academic Affairs, and the Dean of Graduate and Continuing Education. Credit received for transferred courses is counted only as credit hours earned; no quality points or grades are transferred or calculated in the student's cumulative gpa.

A minimum of 45 semester hours towards a baccalaureate degree must be completed at Fitchburg State College. At least 50% of major credits and 50% of minor credits must also be completed at Fitchburg State College. Major departments may have additional requirements.

10. Honors

The President's List honors students for consistently high academic achievement. Students are named to the President's List when they have attained a semester average of 3.75 or higher for three successive semesters while maintaining full-time status. Students who have attained an average of 3.2 or better for the semester while maintaining full-time status are placed on the Dean's List.

Students taking a full course load through the Continuing Education division (12 s.h. or more) during the summer sessions can be named to the Summer Dean's List or President's List if they meet the cumulative average specified for these honors.

Graduation honors are noted in recognition of an outstanding academic career as signified by a high cumulative average. Students graduate with highest honor, Summa cum Laude, if their cumulative *gpa* is 3.8 or higher. They graduate with high honor, Magna Cum Laude, if their cumulative *gpa* is 3.5 or better, and with honor, Cum Laude, if their cumulative *gpa* is 3.2 or better. To graduate with honors, a student must have completed at least sixty credits at Fitchburg State College with a *numerical* grade.

11. Attendance

Each instructor has the prerogative to place a value upon class attendance, subject only to the limitation that the members of each class be informed of that value early in the semester. The instructor's class attendance standard should be stated in the course syllabus. Where acceptable cause for absence can be substantiated, the student is required to produce appropriate documentation for the instructor's review.

Section 2B of Chapter 151c of the General Laws of the Commonwealth of Massachusetts reads as follows: Any student in an educational or vocational institution, other than a religious or denominational educational or vocational training institution, who is unable, because of his religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirement, and shall be provided with an opportunity to make up such examina-

tion, study, or work requirement which he may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon the school. No fees of any kind shall be charged by the institution for making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of his availing himself of the provisions of this section.

In the event of inclement weather, the cancellation of classes will be reported to the following radio stations: WBZ, WEIM, WTAG, WGAW, WINQ, WBCN, and campus radio, WXPL.

Academic Dishonesty Policy

Academic dishonesty in all its forms, including cheating, fabrication, plagiarism, and the facilitating of academic dishonesty by aiding and abetting any of the aforementioned is not tolerated at Fitchburg State College. Violators will be subject to the following process.

Step One

Cases involving alleged academic dishonesty will ordinarily be handled by the faculty member. The faculty member may wish to consult with the chairperson. Within 10 days of the discovery of the alleged offense, the faculty member will contact the student, inform him/her of the circumstance in question, and arrange a meeting to discuss it. If the faculty member finds the student responsible for the alleged behavior he/she will write a statement, either during the meeting with the student or within 7 days of it, indicating the alleged dishonesty, his/her judgment regarding it, and the sanctions, if any, to be imposed. The student will sign the statement, indicating either that he/she accepts the outcome or that he/she has seen the statement but does not accept the outcome. The student gets a copy of this statement, and the faculty member retains the original as part of his/her records for the class.

Students found responsible for the alleged behavior based upon the evidence presented may be subject to one or more of the following sanctions by the faculty member:

1. be required to complete additional course requirements; this may include repeating part or all of the work in question.
2. receive a grade of 0.0 for the work in question.
3. receive a grade of 0.0 for the course.
4. be referred to the department chairperson for transmittal of the case to the Committee on Academic Dishonesty. If the referral is made at a time when a grade is due to the Registrar, the faculty member will submit an Incomplete for the student.

Students found not responsible for the alleged behavior after the meeting with the faculty member will be so notified in the written statement described above.

Step Two

When the faculty member has taken the action described under # 4 above, the chairperson will submit the case to the Committee on Academic Dishonesty. In choosing to refer the case to the Committee, the faculty member agrees that the disposition of the case, including the imposition of any of the sanctions listed in step three, will be determined by the Committee.

When the student feels that the accusation made and/or the sanctions imposed by the faculty member are unfair, he/she may take the case to the department chairperson. The chairperson will arrange a meeting with the student and the faculty member both present. Within 10 days of this meeting, the chairperson will notify the student and the faculty member in writing of his/her opinion on the case.

Step Three

If the student is dissatisfied with the outcome of an appeal to the chairperson, he/she may appeal the case to the Committee on Academic Dishonesty. This process is initiated by contacting the Dean of Curriculum and Instruction or another administrator in the Office of Academic Affairs.

Cases may be referred directly to the Committee when the student(s) accused of academic dishonesty is not in the class of the discovering faculty member or when students want to bring a case against other students.

The Academic Dishonesty Committee is composed of 2 faculty members appointed for a one-year term by the MSCA faculty union, 2 student members of the Student Judicial Board, and an administrator from the Office of Academic Affairs, who will chair the committee.

Once a case is referred to the Committee on Academic Dishonesty, the procedures and timelines of the Student Judicial Code apply.

Students found responsible* for the alleged behavior by the Committee may be subject to the following actions:

1. have the sanction(s) imposed by the faculty member lessened;
2. have the sanction(s) imposed by the faculty member upheld;
3. receive a grade of 0.0 for the work in question;
4. receive a grade of 0.0 for the course;
5. be required to perform some kind of service to the College community;
6. be referred to the President of the College with a recommendation of Suspension;
7. be referred to the President of the College with a recommendation of Expulsion.

Students found not responsible for the alleged behavior by the Committee will be recompensed in one or more or all of the following ways:

1. all work which had been in question will be accepted;
2. the sanction(s) imposed by the faculty member will be removed.
3. an opportunity to redo part or all of the assignment or exam in question will be granted when the Committee has found that a seeming act of academic dishonesty was unintentional and the result of a lack of understanding of proper procedure.

*Rules of Evidence do not apply in College hearings. Evidence "beyond a reasonable doubt" is not necessary for a student to be found responsible. The Committee will be asked to determine, from the evidence presented by both sides, which side has more evidence to support it.

XIII. Departmental Policies

Existing departmental policies are approved pending revisions.

Behavioral Sciences: Human Services Program

Student Review, Retention, and Dismissal Policies

1. Suitability for a Career in the Human Services

A student's suitability for a career in the Human Services Field is evaluated by the Human Services Review Committee based upon:

a. demonstrated competencies in Human Services informational, intellectual skills, intrapersonal and interpersonal components (see: Human Services Program Student Competencies in the Human Services Program Manual);

b. positive letters of recommendation and evaluations from student volunteers and field practica experiences; and,

c. a positive, student-written, personal statement outlining interests, strengths, "growth areas", and intentions for a career in Human Services.

2. The Human Services Review Committee

Composition of the Human Services Review Committee is established at the beginning of each academic year by the Behavioral Sciences Department. The committee consists of full-time departmental faculty who teach in and/or advise students in the Human Services Program. The Committee is responsible for implementing all Human Services' student reviews, retentions, and dismissal policies.

3. Review, Retention, and Dismissal

a. **Upon Admission Into The Program**—Students may enter the Human Service Major either by declaring it as a major upon admission to the college (as a freshman or as an external transfer) or by transferring into the major from another major within the college (internal transfer).

Students who declare Human Services as a major upon admission (freshman or external transfers) will be subject to retention review by the Human Services Review Committee following the completion of the courses Introduction to Human Services or Interviewing Techniques. Retention will be based upon suitability for a career in Human Services.

Students transferring into the major from another major within the college (internal transfers) require: (a) a 2.0 cumulative grade point average; (b) successful completion of the course Introduction to Human Services; and (c) a determination of suitability for a career in the Human Services field.

If student dismissal from the Human Services Program is warranted after review by the Human Services Committee, the student will be informed in writing as to the reasons for said dismissal and the procedures which may be utilized for appeal. The Human Services Review Committee will notify the Chairperson of the Behavioral Sciences Department, who will then recommend to the Vice President for Academic Affairs that said student not be retained in the Human Service Program.

b. **Junior Level Progress**— Students will be subject to retention review by the Human Services Review committee following the completion of the courses Social Group Work and Methods of Case Reporting and Analysis. Retention will be based upon suitability for a career in the Human Services Field, specifically:

- a cumulative quality grade point average of 2.5 in required Human Services informational and skill component courses (Introduction to Human Services, Introduction to Sociology, General Psychology, Abnormal Psychology, Human Growth and Development, Interviewing Techniques, Social Group Work, and Methods of Case Reporting and Analysis) and demonstrated effective writing and oral communication skills;
- demonstrated appropriate Human Services intrapersonal and interpersonal behavior including positive letters of recommendation and evaluation from student volunteer and field practica (150 hours minimum) experiences;
- a positive, student-written, personal statement outlining interests, strengths, "growth areas", and intentions for a career in Human Services.

Students with a cumulative quality point average of 2.0 or less in Human Services informational and skill component courses and/or students who fail to demonstrate appropriate intrapersonal and interpersonal behaviors will not be retained in the program.

Students receiving a cumulative quality grade point average between 2.0 and 2.49 in Human Services informational and skill component courses will be permitted to take up to three more courses at Fitchburg State College (with advisor and Human Services Review Committee approval) to improve and thereby demonstrate competencies. If, after taking these courses, a student still fails to achieve the required 2.5 cumulative grade point average the student will not be retained in the program.

If student dismissal from the Human Service Program is warranted after review by the Human Services Review Committee, the student will be informed in writing as to the reasons for said dismissal and the procedures that may be utilized for appeal. The Human Services Review Committee will notify the Chairperson of the Behavioral Sciences Department, who will then recommend to the Vice President for Academic Affairs that said student not be retained in the Human Services Program.

c. **Field Work Eligibility**— Successful completion of Field Work is required for graduation from the Human Services Major. Admissions into the major, however, does not guarantee a student's entry into Field Work. Eligibility for Field Work is based upon the successful completion of the Field Work Eligibility Requirements.

- a cumulative quality grade point average of 2.5 in the required Human Services informational and skill component courses;
- demonstrated effectiveness in writing and oral communication skills;
- demonstrated appropriate Human Services intrapersonal and interpersonal behavior;
- positive recommendations by a majority of the faculty members in the Human Services Program;
- no incomplete grades, no probationary status, and no unresolved failures in the candidate's major field of study;
- a semester between the courses Social Group Work and Methods of Case Reporting and Analysis and Field Work;
- a minimum of 150 hours of supervised practica experience;
- twelve semester course hours, with three faculty members, in the Human Services Program;

- meets Residency Requirement for Human Services major: One full semester of coursework is required between the semester in which a student is admitted into the program and the semester in which Field Work is to be conducted.

If a student is not eligible for Field Work after review by the Human Services Review Committee, the student will be informed in writing as to the reasons for non-eligibility and the procedure which may be utilized for appeal. The Human Services Review Committee will notify the Chairperson of the Behavioral Sciences Department, who will then recommend to the Vice President for Academic Affairs that said student not be retained in the Human Services Program.

Communications/Media Department

1. Upon completion of 60 semester hours or upon completion of Communication Theory, Message Design and the first course in the concentration (Intro to TV Production, Film Production I, Graphic Design I, Photography I, and Public Relations), the advisor will calculate the GPA in Communications/Media and take the following action:
   a. Students with a 2.5 or above Communications/Media gpa will be continued in the major.
   b. Students with less than a 2.0 will be referred to the Chair with a recommendation that the Vice President for Academic Affairs drop them from the Communications/Media major.
   c. Students receiving between a 2.0 and 2.49 will be referred to the department review committee.
2. The review committee (consisting of the advisor, a conceptual/methodological instructor and the instructor of the appropriate above stated concentration course), shall review the following:
   a. Academic performance in above stated courses
   b. Career expectations
   c. Samples of work
   d. Professional attitude
   e. Student statements given in an interview
3. Upon completion of the review, the committee will conclude one of the following:
   a. determine that the individual is unsuitable for the profession and recommend to the Vice President for Academic Affairs that he/she be dropped from the program;
   b. determine that the individual has potential in the profession and, is, therefore, continued in the major; and
   c. determine that the individual should be permitted to take up to three additional courses in Communications/Media. If, upon completion of one, two or all three of the courses, the individual achieves a 2.5 gpa in Communications/Media, the individual is continued in the major. If the individual fails to achieve the 2.5 Communications/Media gpa at the completion of three courses, a recommendation is forwarded to the Vice President for Academic Affairs that the individual be dropped from the program.

In the event of a split decision, the Chair shall select a third person to review the above information and render a decision while in consultation with the other two committee members.

The review committee will meet on the first Monday evening following the start of a semester to perform the review and render a determination.

4. The Chair reserves the right to make a determination if the review committee is unable to meet. The Chair shall notify the advisor and concentration professor of his/her determination.
5. Those individuals reviewed by the review committee shall be notified of the determination not later than three days after the committee rendered its determination.
6. Advisors of Communications/Media majors shall provide career and portfolio counseling during the semesters prior the senior year.
7. Upon completion of 90 semester hours all majors will be reviewed by the Department Chairperson to determine if a 2.5 Communications/Media gpa has been maintained for access to the department's internship program (a required phase of the major). Those individuals lacking a 2.5 may be asked to complete additional Communications/Media courses that could enable the individual to achieve the gpa required for internship eligibility, or apply for a waiver from the 2.5 requirement. If a 2.5 Communications/Media gpa has been maintained, the student may enter into the process to obtain an internship as prescribed in the Communications/Media Internship Handbook.

Medical Technology Program

1. Students will be evaluated twice for continuance in the Medical Technology Program. Upon completion of 60 semester hours, or upon completion of the Medical Technology core curriculum for the freshman and sophomore years, the program director will calculate the gpa in the Medical Technology core curriculum courses. Upon completion of 90 semester hours, or upon completion of the curriculum for the freshman, sophomore and junior years, the program director will again calculate the gpa in the Medical Technology core curriculum courses.
   a. Students with a gpa of 2.5 or above in the Medical Technology core curriculum will continue in the major.
   b. Students with less than 2.0 will be referred to the Vice President of Academic Affairs with the recommendation that they not be retained in the Medical Technology Program.
   c. Students with a gpa of 2.0 to 2.49 in the Medical Technology core curriculum will be referred to the Medical Technology Appeals Committee for academic review. To continue in the major, the Committee may recommend the student complete additional courses that would enable the student to achieve the required gpa. The Committee may also recommend that the student meet regularly with his/her advisor or go to the Study Skills Center.
2. Appeal Mechanism
   a. A student who has been referred for academic review must submit a written petition to the Medical Technology Appeals Committee. The Committee will review the student's record and recommend whether or not the student should continue in the major. With the letter of petition, the student may also submit letters of support from his/her academic advisor, instructors, and any other pertinent information which may be relevant to the situation. Students who fail to submit a written petition to the Appeals Committee will have their names referred to the Vice President of Academic Affairs with the recommendation that they not be retained in the Medical Technology Program.

c. After academic review, the Appeals Committee will forward to the Vice President of Academic Affairs the names of those students who the Committee recommended be dismissed from the program. The student will be notified in writing of the final decision of the Committee. A student who has been dismissed from the program after being reinstated once may not petition again for reinstatement.

d. A student who has been allowed to continue in the program after appeal and fails to maintain a 2.5 gpa in the Medical Technology core curriculum may not petition again for reinstatement. Their names will be forwarded to the Vice President of Academic Affairs with the recommendation that they be dropped from the Medical Technology Program.

3. Medical Technology core curriculum consists of the following courses:

Freshman and Sophomore Level Courses

MEDT 1000	Introduction to Medical Technology
MEDT 1200	Medical Terminology
CHEM 1300	General Chemistry I
CHEM 1400	General Chemistry II
MATH 1700	Applied Statistics
MEDT 1400	Clinical Laboratory Techniques
CHEM 2000	Organic Chemistry I
CHEM 2100	Organic Chemistry II
MEDT 3600	Clinical Laboratory Data Analysis
BIOL 2420	Human Physiology
BIOL 2800	Genetics
MEDT 2000	Basic Hematology

Junior Level Courses

MEDT 3000	Professional Issues
BIOL 3450	Biochemistry
BIOL 3900	General Microbiology
MEDT 3400	Parasitology/Mycology
MEDT 3200	Immunoassay
CHEM 3500	Analytical Chemistry II
BIOL 4810	Immunology

Nursing

To be in good standing in the major and progress to the next semester, students must achieve a 2.0 or better in all required nursing courses. Students in the major may repeat a failed nursing course one time. Failure to achieve a 2.0 when a course is repeated will result in disenrollment from the major. The repeat policy may be used one time during the course of study.

Teacher Preparation Programs

All departments having a teacher preparation component will follow the same procedure for due process. Two reviews will occur, one during the fall semester of the sophomore year and the second during the fall semester of the junior year to be eligible for enrollment in the Practicum of the education courses of their major. In addition, students must attain a gpa of 2.0 overall. The following forms must be completed by/for each student.

Courses and Programs in the College

Departments, Degree programs, Majors and Minors

The College has 17 Academic Departments. Each department may have responsibility for one or more majors or degree programs, several tracks within the major and several minors. In the following section, the requirements for department majors and minors are outlined under each program area. The required and elective courses in each program are defined to help you with course selection. Please see the appropriate Department Chairperson for specific information about application for admission into a particular major or minor.

Departments

Behavioral Science
- Psychology
- Sociology
- Human Services

Biology
- Medical Technology

Business Administration

Chemistry

Communications/Media

Computer Science

Early Childhood, Elementary and SecondaryEducation

English/Speech

Geo/Physical Sciences
- Earth Science
- Geography
- Physics

Humanities
- Art
- Foreign Languages
- Music
- Philosophy

Industrial Technology

Mathematics

Military Science

Nursing

Physical Education

Social Science
- Economics
- History
- Political Science

Special Education

Minors

Art

Biology

Business Administration

Chemistry

Computer Science
Criminal Justice

Economics

***Elementary Education**

English

Foreign Languages
- French
- German
- Spanish

Geography

Earth Science

Graphics

History

Industrial Technology

Mathematics

Music

Philosophy

Physical Education

Political Science

Psychology

Russian Studies

Sociology

Theater

Women's Studies

Majors/Degrees/Tracks

Biology
B.A. Biology
†Biology Education Program
*Certification Only
B.S. Biology
Biology/Environmental Science
Biology/Exercise Science

Business Administration
B.S. Business Administration
Accounting
Management
Marketing

Chemistry
B.A. Chemistry
B.S. Chemistry

Communications/Media
B.S. Communications
Graphic Design
Interactive Communication
Motion Picture Production
Non-Broadcast Television Prod.
Photography
Technical Writing

Computer Science
B.S. Computer Science

Early Childhood Education
B.S. Education
†Early Childhood Education Program
*Certification Only

Economics
B.S. Economics

Elementary Education
B.S. Education
†Elementary Education Program
*Certification Program

English
B.A. Literature
B.A. Professional Writing
†English Education Program
*Certification

General Studies
B.A. General Studies
B.S. General Studies

Geography
B.A. Geography
Geography
Earth Science
B.S. Geography
Geography
Earth Science
†Earth Science Education Program
*Certification

History
B.A. History
†History Education Program
*Certification Only
B.S. History

Human Services
B.S. Human Services

Technology Education
†Technology Education Program
*Certification

Industrial Technology
B.S. Industrial Technology
Construction Technology
Electronics Technology
Graphic Arts Technology
Manufacturing Technology

Mathematics
B.A. Mathematics
†Mathematics Education Program
*Certification
B.S. Mathematics

Medical Technology
B.S. Medical Technology

Nursing
B.S. Nursing

Psychology
B.A. Psychology
B.S. Psychology

Sociology
B.A. Sociology
B.S. Sociology

Middle School Education
B.S. Education
*Middle School Education Program
*Certification Program

Special Education
†Special Education Program
Teacher of Students with Special Needs (Grades N - 9)
Teacher of Students with Special Needs (Grades 5 - 12)
Teacher of Students with Intensive Special Needs (all levels)
Teacher of Students with Visual Impairments (all levels)
*Certification
(Special Education and Elementary Education or Special Education Only)

*See the Coordinator of Teacher Certification regarding certification requirements.

†State regulations require a liberal arts or science major in addition to all professional education programs.

Art

Chairperson:
Harry Semerjian

Asst. Professors:
Amy Dobrian
Susan Wadsworth

Professors:
Donna Bechis
Louis Lorenzen

The Minor in Art

The Minor in Art will require a minimum of 18 semester hours. Students should prepare their minor in close consultation with an Art Advisor. Students will take Basic Drawing, Design, Three Dimensional Design; Survey of Art History I or II; one course in the History of Art or Museum Internship; and an additional Studio Course.

Course Offerings

*Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designated interdisciplinary courses.

ART 1000 **3 cr. 3 hr.**
Survey of Art Forms I
A study of architecture, sculpture, and painting from ancient Egyptian times to the Renaissance in Europe. Emphasis is placed on understanding style in these various art forms. C

ART 1200 **3 cr. 3 hr.**
Survey of Art Forms II
A survey of significant styles in the architecture and painting of the Western World from the year 1800 to the present with emphasis upon the special nature of the visual experience. C

Art 1250 **3 cr. 3 hr.**
Art Appreciation
A condensed survey of art history from prehistoric art to the present emphasizing the historical relationship of style and content. Periods of emphasis include Greek, roman, Renaissance, Impressionist and Modern art. Women artists include Artemsia Gentileschi, Elizabeth Vigee-Lebrun, Mary Cassatt, Berthe Morisot, Georgia O'Keeffe, Elizabeth Murray and many others. Minority artists include Henry Ossawa Tanner, Diego Rivera, Jacob Lawrence, Romare Bearden, Martin Puryear and many others.

Art 1300 **3 cr. 3 hr.**
History of Architecture
A condensed survey of architectural history form ancient art to the present. Periods studied include Greek, Roman, Romanesque, Gothic, Renaissance, and Baroque architecture. Non-Western architecture includes the culture of Japan, Pre-Columbian Mexico, India, and Islam. IDIS, C

ART 1400 **3 cr. 6 hr.**
Drawing
A studio course which introduces students to the practice of drawing with emphasis upon the description of form through means of line, shade, and perspective. Investigation of a variety of media as well as basic stylistic alter natives is encouraged.

ART 1500 **3 cr. 6 hr.**
Life Drawing
The basic problems in form and anatomy are studied while drawing from the nude and costumed model. Various techniques and tools are explored including a study of some of the great masters' drawings.

ART 1600 **3 cr. 3 hr.**
Design
The basic elements of design will be applied to the creation of two-dimensional form. Studio work will explore the effect of black and white, color, and mixed media on form.

ART 1700 **3 cr. 3 hr.**
Three Dimensional Design
Three Dimensional Design concepts as they have been applied historically. Topics covered include form, space, structure, scale, line, and color. Lectures, slides, film, and visual presentations included in course program.

ART 1800 **3 cr. 3 hr.**
American Art
A survey of significant stylistic developments in visual arts from the earliest colonial times to the present.

Art 1810 **3 cr. 3 hr.**
Nineteenth Century Art
A survey of art from French Neo-Classicism through Post-Impressionism, including the movements of Romanticism, Realism, and Impressionism. Emphasis will be placed upon French, British, and German art, with pertinent comparisons to American, Japanese, African, and ethnographic art. Women artists may include Berthe Morisot, Mary Cassatt, Rosa Bonheur, Suzanne Valadon, and others. Minority artists include Henry Osawa Tanner.

Art 1815 **3 cr. 3 hr.**
Early Twentieth Century Art
A multicultural survey of art from 1890 to 1945 in Europe and the United States. Periods covered include French Post Impressionism, Fauvism, and Cubism; German Expressionism; Spanish and French Surrealism; Early American Modernism, the Harlem Renaissance and Regionalism. Women artists may include Suzanne Valadon, Kathe Kollwitz, Gabriel Munter, Frida Kahlo, Emily Carr, and Georgia O'Keefe. Minority artists may include Henry Ossawa Tanner, Jacob Lawrence, Romare Bearden, Horace Pippin, Bob Thompson, Diego Rivera, and others.

ART 1820 **3 cr. 3 hr.**
Contemporary Art
A study of recent and contemporary trends in art in Europe and America from 1945 to present. Course will consist of active student participation in slide discussions and museum trips. C

ART 1830 **3 cr. 3 hr.**
Women, Art and Society
This course attempts to make the student aware of the place and roles of women in the world of visual and fine arts from the middle ages to the present.

ART 1840 **3 cr. 6 hr.**
Introduction to Sculpture
This introductory studio course encourages students to explore their ideas and to transform them into sculpture. Students combine creativity, exciting materials, and basic sculpture techniques to create unique works of art.

ART 1900 **3 cr. 3 hr.**
Art of the Renaissance
A study of the development of painting, sculpture, and architecture in Italy from 1250 to 1550, the age of Michelangelo, and the Northern Europe Renaissance from 1400 to 1600.

ART 2000 **3 cr. 6 hr.**
Introductory Painting
A study of the basic problems of form, color, and texture as understood in oil paintings. Consideration is also given to the nature and use of the oil painting materials themselves.

Art 2100 **3 cr. 6 hr.**
Intermediate Drawing
An advanced study of pictorial technique in dry media, including but not limited to charcoal, pencil, conte, and pastel. Emphasis will be placed upon the students developing their own style through a variety of subjects and media.
Prerequisite: Art 1400.

***ART 2400** **3 cr. 6 hr.**
Advanced Sculpture
This studio course is an expansion upon the basic principles of sculpture, on a more advanced level. Sculpture projects will be geared toward the individual interests and requirements of the advanced student.
Prerequisite: ART 1840.

***ART 2700** **3 cr. 6 hr.**
Advanced Painting
An advanced study of pictorial techniques with an emphasis on personal expression in oil, acrylic, or water based media.
Prerequisite: Art 2000 or 2750.

ART 2750 **3 cr. 4 hr.**
Water Based Media
A basic course in the principles, materials, techniques, and history of transparent watercolor. This course deals primarily with transparent watercolors but opaque aqueous media is touched upon. Basic knowledge and skills are developed so that the student may acquire rudiments for visual expression through this media. Although basic drawing is desirable, it is not required.

ART 2800 **3 cr. 3 hr.**
Art in Elementary School
Practice of art as well as observation and discussion of the philosophy of art education in the elementary grades.

***ART 3000** **3 cr. 6 hr.**
Museum Internship
In conjunction with Fitchburg State College, the Fitchburg Art Museum is offering a multifaceted learning experience coupled with practical application conducted in the Fitchburg Art Museum and in elementary school classrooms of Fitchburg and surrounding towns.

Student Instructors will be trained to give instructional lectures about the ancient cultures of Egypt, Mesopotamia, and Mesa Verde, to school children both in the Museum galleries and in the classroom.

Art 3100 **3 cr. 3 hr.**
Art Criticism
A study of the development of modern art criticism. The course begins by examining traditional art criticism as established by Panofsky, Woefflin, and others. It then concentrates on contemporary art and criticism: commencing with Clement Greenberg in the 1940's and concluding with Postmodern criticism of the 1980's and 1990's.
Prerequisite: Art 1000, 1100, 1820, or 1900.

ART 4901 **1 cr. 1 hr.**
Independent Study in Art

ART 4902 **2 cr. 2 hr.**
Independent Study in Art

ART 4903 **3 cr. 3 hr.**
Independent Study in Art
For selected students, upon approval of both department head and advising Instructor.

ART 5000 **3 cr. 3 hr.**
Topics in Art
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Biology

Chairperson:
Howard Thomas

Professors:
Neal Anderson
George Babich
George Bond
Stanley Dick
Stanley Krane
Rose Marie Neunherz
Donald Schmidt
Howard Thomas
Robert Zottoli

Assoc. Professors:
Alice O'Malley
Wanda Roguski
Edward Armstrong
Dorothy Boisvert

Asst. Professor:
Elizabeth Szymczak
Margaret Hoey

The Biology Department has a triple mission: 1) to provide undergraduate training in the biological sciences for our majors and minors; 2) to provide a variety of service courses for specific major programs; 3) to provide courses for the Liberal Arts and Sciences Program in laboratory science for students in all other majors. As a consequence, the Biology Department aims to provide quality service courses for all non-majors choosing one or more of our courses as well as a nucleus of fundamentals which build and expand in a variety of directions for a major in Biology.

Students who qualify for admission to the College are eligible to become majors in the Biology Department. In addition, students must maintain college-wide accepted quality point averages throughout their degree program in order to remain as a major in our department.

The Major in Biology

B.S. and B.A. in Biology

All students in either the Bachelor of Science or Bachelor of Arts programs in Biology are offered a required core sequence of the following courses:

BIOL 1800 General Biology I
BIOL 1900 General Biology II
BIOL 2300 Ecology
BIOL 2800 Genetics
BIOL 3250 Cell Biology
BIOL 3550 Developmental Biology

Twelve semester hours of additional biology electives at or above the 2000 level are required of biology majors. The course numbers (1000-4000)

reflect the year in which one would normally take the course. They may be chosen in an area of specialization. These specializations can be developed, in consultation with a faculty advisor, into individualized informal academic career tracks.

Both the B.S. and B.A. in Biology degrees require the following additional courses in related sciences:

CHEM1300/CHEM 1400
General Chemistry I and II
CHEM 2000/CHEM 2100
Organic Chemistry I and II
PHYS 1300/PHYS 1400
General Physics I and II

Two courses in mathematics at or above the level of MATH 1250, Introduction to Functions.

The B.A. in Biology, in addition to all the above requirements, requires foreign language proficiency at the second year college level.

Provisional Certification for Teaching Biology

Students interested in teaching Biology on the secondary level will need to complete the provisional certification track. The requirements are as follows:

Major: Biology

Core Courses

BIOL 2860 Introduction to Secondary School Teaching 3 cr.
ENGL 4700 Teaching Writing in Secondary Schools 3 cr.
BIOL 4850 Special Methods in Biology 3 cr.
BIOL 4940 Biology Practicum in a Secondary School (150 hrs.) 6 cr.
15 cr.

External Requirements for all Secondary Education Students:
Liberal Arts and Sciences distribution which includes:
PSY2230 Adolescent Psychology

B.S. in Biology/Environmental Science

The Bachelor of Science in Biology/ Environmental Science includes all requirements of the B.S. in Biology. Additional requirements are:

BIOL 4950 Internship in an Environmental Science area.

Six semester hours of Earth Science or Geology.

Three semester hours in Computer Science.

For those concentrating in Environmental Science, the Department recommends that, subject to availability, Liberal Arts and Sciences be partially fulfilled by courses in Geography, Macroeconomics, Environmental Law, and Urban Planning; Photography, Drawing, Ethics, and Technical Writing.

B.S. in Biology Exercise Science

(see Physical Education)

All students in the Bachelor of Science in Biology/Exercise Science are offered a required core sequence of the following biology and physical education courses:

BIOL 1200 Anatomy & Physiology I
BIOL 1300 Anatomy & Physiology II
BIOL 1650 Nutrition
BIOL 2800 Genetics
BIOL 3250 Cell Biology
BIOL 3450 Biochemistry
BIOL 3550 Developmental Biology
PHED 3070 Exercise and Sport Science
PHED 4040 Behavioral Concepts of Sport
PHED 4120 Biomechanics of Sport
PHED 4950 Internship

The Bachelor of Science in Biology/ Exercise Science includes all requirements of the B.S. in Biology with the exception of:

Substituting BIOL 1200 and BIOL 1300 instead of BIOL 1800 & 1900; BIOL1650 instead of BIOL 2300; and requiring BIOL 3450 Biochemistry.

The Minor in Biology

The minor in Biology will provide a means by which students can include and demonstrate in their academic record evidence of a substantial and coordinated subsidiary expertise in biological sciences. The minor in Biology requires a minimum of 18 semester hours of course work in the area distributed as follows:

A. One year (6 or 8 semester hours) of entry-level Biology sequences:

BIOL 1000/BIOL 1100 Life Science I and II, or BIOL 1200/BIOL 1300 Anatomy and Physiology I and II, or BIOL 1800/BIOL 1900 General Biology I and II

B. Ten semester hours of 2000, 3000, or 4000-level courses selected after consultation with a minors advisor in the Biology Department.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

BIOL 1000 **3 cr. 4 hr.**
Introduction to Life Science I
The course focuses on the history, philosophy, and content of biology as a science. Laboratory work includes experiences that emphasize problem solving by the student. For the non-major, 2 hrs. lecture, 2 hrs. lab per week. Offered: fall semester.

BIOL 1100 **3 cr. 4 hr.**
Introduction to Life Science II
Continuation of BIOL 1000. 2 hrs. lecture, 2 hrs. lab per week. Offered: spring semester.

BIOL 1200 **3 cr. 4 hr.**
Anatomy and Physiology I
Structure and function of the human organism on the cellular, tissue, organ, and system levels. Cellular metabolism, histology, and the following systems: skeletal, muscular, and nervous (including the special senses). The laboratory emphasizes both physiology and the dissection of preserved mammalian specimens. 2 hrs. lecture, 2 hrs. lab per week. Offered: fall semester. (Not open to students who have completed BIOL 1700, Human Biology or BIOL 2420, Human Physiology.)

BIOL 1300 **3 cr. 4 hr.**
Anatomy and Physiology II
A continuation of BIOL 1200. The following systems are covered: circulatory, respiratory, digestive, excretory, endocrine, and reproductive. 2 hrs. lecture, 2 hrs. lab per week. Offered: spring semester. *Prerequisite: BIOL 1200 or permission of Instructor . (Not open to students who have completed BIOL 1700, Human Biology or BIOL 2420, Human Physiology.)*

BIOL 1350 **3 cr. 3 hr.**
Adaptations
The human organism is examined in terms of its adaptation to acute and chronic stress. Physiological responses to such stressors as exercise, heat, and darkness, altitude, and nutrition are studied theoretically and in a laboratory setting.

BIOL 1400 **3 cr. 4 hr.**
General Botany
The structure, physiology, and life cycles of the algae, fungi, bryophytes, ferns, gymnosperms, and angiosperms. Relationship of plant biology to agriculture and medicine is also discussed. Laboratory involves study of live and preserved plant materials, simple physiological experiments, and a plant growth project. 2 hrs. lecture, 2 hrs. lab per week. Not recommended for majors or minors in Biology.

***BIOL 1500** **1 cr. 1 hr.**
Seminar in Modern Biology
Discussion of current topics in basic and applied biological research based on readings of original scientific reports. Each student is expected to prepare one brief presentation on a topic of his or her choice.

BIOL 1650 **3 cr. 3 hr.**
Nutrition
Examination of nutrients in foods and their metabolic role in normal nutrition. Emphasis will be on energy sources and utilization, vitamins and minerals, nutritional requirements in relation to the changing demands of life, and the effect of food handling and processing on the nutrient content of food. Lectures, discussions, and personal nutrition projects.

BIOL 1700 **3 cr. 3 hr.**
Human Biology
Anatomy and physiology of the cells, tissues, organs and organ systems of the human organism and their functional inter-relationships. 3 hrs. of lecture/ demonstration per week. (Not open to students who have completed BIOL 1200, 1300.)

BIOL 1800 **4 cr. 6 hr.**
General Biology I
The following topics will be examined during the first semester: Cellular Biology, Information and Heredity, and Plant Physiology and Development. The second semester will cover: Animal Physiology, Integration and Behavior, Diversity of Life, and the Processes and Products of Evolution. Laboratories emphasize hypothesis formation and testing, and data gathering and analysis. 3 hrs lecture, 3 hrs. of lab per week. Offered: fall semester.

BIOL 1810 **3 cr. 3 hr.**
Science in Elementary Education
Methods for teaching Science in the elementary school. Recommended only for Elementary Teaching majors.

BIOL 1900 **4 cr. 6 hr.**
General Biology II
A continuation of BIOL 1800. Offered spring semester.

BIOL 2000 **3 cr. 3 hr.**
Biology of Drugs
A study of the biological effects at the cellular level especially of the more popular psychoactive drugs.
Prerequisite: One year of biology, chemistry, or permission of the Instructor .

BIOL 2300 **3 cr. 4 hr.**
Introductory Ecology
Survey of major ecological concepts and methodology as a basis for further investigations of the dynamic relationship between organisms and their environment. Field and laboratory work emphasize problem identification, formulation of hypotheses, data collection, and analysis and interpretation of results in terms of their biological implications. 2 hrs. lecture, 2 hrs. lab or field trips per week. Offered: fall semester.
Prerequisite: BIOL 1000, or 1100, or 1800 or 1900 or permission of Instructor.

***BIOL 2400** **3 cr. 3 hr.**
Environmental Health
Investigations into that aspect of public health that concerns itself with forms of life, chemical substances, environmental conditions and other forces in the surroundings of man that exert an influence on his health and well-being. 3 hrs. of lecture/discussion and occasional field trips.
Prerequisite: BIOL 1100 or equivalent or permission of Instructor.

BIOL 2420 **3 cr. 3 hr.**
Human Physiology
Intensive study of the functional operation of human organ systems and the interrelationships of these systems. (Intended for students who are majoring in Biology or Medical Technology.)

***BIOL 2500** **3 cr. 4 hr.**
Histology
Systematic survey of the basic animal cell and tissue types, followed by in-depth microscopic study of the major organ systems. Practical work includes histological microtechnique on normal and pathological specimens. Lecture, lab, demonstration, plus some additional time.
Prerequisite: BIOL 1800 or BIOL 2420 or BIOL 1200, 1300.

***BIOL 2550** **3 cr. 3 hr.**
Social Biology
An exploration of the biological and cultural evolution of man and how that evolution has developed or caused specific societal problems. A study of the biological explanations for and possible solutions of these problems. 3 hrs. of discussion per week, 1 hr. independent study.
Prerequisite: 6 semester hours of Introductory Biology or equivalent.

BIOL 2700 **3 cr. 4 hr.**
Survey of Micro-organisms
Introduction to the biology of major groups of micro-organisms: bacteria, viruses, protozoa and fungi, their role in nature and their relationship to man as agents of infectious diseases. Laboratory emphasizes principles and practices of aseptic techniques and diagnostic identification and culture of disease entities. 2 hrs. lecture, 2 hrs. lab per week, plus some additional time. Offered: spring semester.
Prerequisites: BIOL 1300 and Introductory Chemistry or permission of Instructor.

BIOL 2800 **3 cr. 4 hr.**
Genetics
Basic principles of biological information processing: Mendelian inheritance, sex determination, chromosome cytogenetics, linkage, recombination and genetic mapping, mutagenesis, molecular genetics and gene-enzyme relationships, quantitative inheritance. Laboratory work includes study of mutational effects and recombinational analysis in maize, *Drosophila,* bacteria and viruses.
Prerequisite: 3 semester hours of Introductory Biology or equivalent.

BIOL 2860 **3 cr. 3 hr.**
Introduction to Secondary Teaching
This course is required of all students entering a provisional certification program at the secondary level. It is a sophomore level course for full-time undergraduates and the first course taken by transfer and certification-only students. Its purpose is to provide a field experience for students intending to enter teacher preparation, so they can determine whether their decision is a plausible goal; and to expose them to the range of challenges and problems in the contemporary secondary school. This course includes a pre-practicum requirement.

***BIOL 2900** **3 cr. 4 hr.**
Marine Biology
Investigation of the distribution of the dominant animals and plants in a salt marsh, sand beach, tide pool, and rocky intertidal area. Data on physical and chemical factors of these habitats will be correlated with the composition, behavior and physiology of the flora and fauna of each habitat. 4 hrs. of lecture/lab/field work per week, plus some additional hours. Offered: fall semester.
Prerequisites: BIOL 1800, 1900 or permission of Instructor.

***BIOL 3000** **3 cr. 4 hr.**
Parasitology
The morphology and diagnostic identification of representative groups of parasitic protozoa, helminths and arthropods, and their functional life cycles and pathogenic relationships to animal and human hosts. Epidemiology, pathology, control, and treatment of important parasitic diseases. 2 hrs. lecture, 2 hrs. lab per week.
Prerequisite: BIOL 1900.

***BIOL 3100** **3 cr. 4 hr.**
Ornithology
An inquiry into the life of birds. Emphasis is on correlation of structure, function, and behavior. Laboratory studies of external characters, anatomy, and criteria for identification. Required field trips. 2 hrs. lecture, 2 hrs. lab per week. Offered: spring semester.
Prerequisites: BIOL 1100, or BIOL 1900, or permission of Instructor.

***BIOL 3150** **3 cr. 4 hr.**
Ichthyology
The study of the classification, ecology, and physiology of the fish common to Massachusetts. Both marine and freshwater species will be covered, with field collecting trips planned. Class time will be divided between lecture and laboratory work. Offered: fall semester.
Prerequisites: BIOL 1900 and BIOL 2300, or permission of Instructor.

***BIOL 3200** **3 cr. 4 hr.**
Plant Physiology
Individually paced instruction into the study of integration of plant structure and function emphasizing physiology of the integrated plant water relations, transpiration and translocation, mineral nutrition, photosynthesis, respiration, growth hormones, differentiation and morphogenesis. 2 hrs. of conference, 2 hrs. lab per week, plus additional hours. Offered: fall semester.
Prerequisites: BIOL 1900 or BIOL 1400.

BIOL 3250 **3 cr. 4 hr.**
Cell Biology
Cell and subcellular structure and function. Membranes, cell organelles, bioenergetics, photosynthesis, DNA and RNA structure, function and replication, protein synthesis, and gene regulation are the major areas considered. Laboratory includes absorption spectrophotometry, cell fractionation, organelle isolation, DNA isolation and electrophoresis. 2 hrs. lecture, 2 hrs. lab per week. Offered: fall semester.
Prerequisites: BIOL 2800 and CHEM 2100 or permission of Instructor.

***BIOL 3300** **3 cr. 4 hr.**
Entomology
Anatomy, habits, life histories, and identification of insects and some related arthropods. Laboratory work includes preparation of a representative collection of adult and larval forms from terrestrial and aquatic environments with emphasis on techniques for identification of these forms. 4 hrs. lecture/laboratory, plus additional hours for field trips and identification. Offered: fall semester.
Prerequisite: BIOL 1900 or permission of Instructor.

***BIOL 3400** **3 cr. 4 hr.**
Limnology
A study of fresh waters and their inhabitants: survey of protists, invertebrates, vertebrates, and plants collected from local waters and their ecological interrelationships as determined by biological, physical and chemical parameters. 1 hr. lecture, 3 hrs. lab/field trips per week. Offered: fall semester.
Prerequisites: BIOL 1900 and BIOL 2300 or permission of Instructor.

BIOL 3450 **4 cr. 6 hr.**
Biochemistry
A study of the chemistry of biologically important molecules and macromolecules including metabolism and regulation, water, proteins, enzymes, lipids, carbohydrates, and nucleic acids. Laboratory emphasizes manual and instrumented techniques for isolation, qualitative and quantitative analysis of macromolecules, and the kinetics and induction of enzymes. 3 hours lecture, 3 hours laboratory per week. Offered: fall semester.

***BIOL 3500** **3 cr. 5 hr.**
Plant Taxonomy
Classification of higher plants in accordance with evolutionary principles and trends. Laboratory is devoted to the techniques of plant identification with emphasis on the terminology and use of botanical keys. Field trips for collecting representative elements of the local flora and preparation of an herbarium. 1 hr. lecture, 4 hrs. lab per week, plus some independent project work. Offered: fall semester (alternate years).
Prerequisite: BIOL 1400 or 1900 or permission of Instructor.

BIOL 3550 **4 cr. 6 hr.**
Developmental Biology
A detailed survey of developing embryos from the fertilized egg through the various stages leading to the adult organism. Current theories regarding the molecular mechanisms underlying cell differentiation and other classic developmental processes are also themes of this course. Other topics include regeneration, metamorphosis, aging and cancer. Laboratory involves study of development in live sea urchins, birds, frogs, and ferns as well as work with prepared slides. 3hrs. lecture, 3 hrs. lab per week. Offered: spring semester.
Prerequisites: BIOL 1400, BIOL 1900, BIOL 2800, or permission of Instructor.

***BIOL 3600** **3 cr. 4 hr.**
Biology of Algae
Collection and identification of common algae found in the New England area. Emphasis on freshwater forms, but some study of marine algae as well. Distribution of algal species will be correlated with physical and chemical factors in their habitats. Laboratory will include study of algal physiology and reproduction as well as techniques for cultivation. 1 hr. lecture, 3 hrs. lab/field trips per week.
Prerequisite: BIOL 1400 or BIOL 1900.

***BIOL 3700** **3 cr. 4 hr.**
Mammalogy
A study of the biology of mammals with emphasis on New England species. Laboratory work will include identification and preparation of small mammal study skins. Field trips will be made to capture and study animals in the field and to visit museums for access to study collections and habitat groupings of the larger mammals unlikely to be seen in the wild. 4 hrs. lecture/laboratory plus additional hours for field trips.
Prerequisite: BIOL 1900 or permission of Instructor.

BIOL 3900 **4 cr. 6 hr.**
General Microbiology
Structure, nutrition and growth of bacteria, characterization of representative bacteria, fungi, viruses and protozoa and their genetic and metabolic peculiarities, immunologi-

cal techniques, and the immune response in man. Laboratory work includes aseptic technique, isolation and cultivation of microbes, staining techniques and diagnostic metabolic reactions. 3 hrs. lecture, 3 hrs. lab per week, plus additional time. Offered: fall semester.
Prerequisites: Organic Chemistry and BIOL 2800 or permission of Instructor.

***BIOL 4250 3 cr. 3 hr.**
Endocrinology
A study of chemical integration of physiological processes by hormones and related agents. Discussions include structure and function of vertebrate and other animal endocrine systems, neuroendocrine relationships, and other topics of current interest. 3 hrs. lecture, demonstration per week.

***BIOL 4500 4 cr. 6 hr.**
Molecular Biology
A course dealing with restriction enzymes, plasmids, recombinant DNA, sequencing of DNA, oncogenes, and other topics of current interest in molecular biology. Laboratory work consists of gel electrophoresis, analysis of restriction enzyme digestion, and gene cloning experiments.
Prerequisites: BIOL 2800 and BIOL 3250 or BIOL 3450.

***BIOL 4600 3 cr. 3 hr.**
Evolution
An introduction to the principles and processes governing the evolution of living organisms. Emphasis will be placed on the ways by which various other biological disciplines relate to evolutionary studies. A survey of paleontological evidence will be given to demonstrate how evolutionary principles have affected life. 3 hours of lecture per week.
Prerequisites: BIOL 1900, 2300, and 2800 or permission of Instructor.

***BIOL 4800 3 cr. 3 hr.**
Neurobiology
A survey of neural activity and the neural bases of behavior as illustrated by simpler invertebrate and vertebrate nervous systems. Topics will include: structure and function of neurons, neurodevelopment, cellular basis of behavior (sensory and motor systems), neuropharmacology, neural plasticity. Lectures/demonstrations.
Prerequisites: BIOL 1200/1300, or BIOL 1800/1900 and one year of Chemistry, or permission of Instructor.

BIOL 4810 3 cr. 3 hr.
Immunology
A survey of the immune response, antibody formation and function, immunosuppression, blood group antigens and antibody-antigen reactions. The principles of complement activity, hypersensitivity and autoallergic reactions. 3 hrs lecture/demonstration per week. Offered: spring semester.
Prerequisites: BIOL 3900 and Organic Chemistry.

BIOL 4850 3 cr. 3 hr.
Biology Teaching Methods
Methods and philosophical background for teaching of modern biological science. (This course is a prerequisite for student teaching and should be taken prior to student teaching; consult Screening Policies for Student Teachers for other requirements for student teaching.) 1 hr. public school assisting, 1 hr. discussion, 1 hr. independent study per week.
Prerequisites: junior or senior standing, EDUC 3010, PSY 2230, and permission of Instructor.

BIOL 4901-4903 1 to 3 credits
Independent Study
Laboratory or other independent research under the guidance and supervision of one or more faculty members. A comprehensive term paper and an oral presentation are required for successful completion of the project. Offered: fall and spring semesters. May be repeated for credit to a maximum of 9 semester hours.
Prerequisites: junior or senior standing, 15 credits of Biology and special permission of the Departmental Curriculum Committee.

BIOL 4940 6 cr.
Biology Practicum in a Secondary School
Students are assigned to cooperating schools for a semester of student teaching.

BIOL 4950, 4960 **3, or 6 cr.**
Internship
Off-campus laboratory or field experience in conjunction with established research programs at cooperating governmental, industrial, or private facilities. Supervision is shared by program directors and faculty members at Fitchburg State College. Assignments are contingent upon students' abilities and acceptance by the cooperating institution. One or two full days of work per week may be expected. Course may be repeated up to a maximum of 12 semester hours. A comprehensive term paper and an oral presentation are required after each semester of internship work for successful completion of the project.
Prerequisites: junior or senior standing and approval of the Biology Department.

***BIOL 5000** **3 cr. 3 hr.**
Topics in Biology
Courses having a more narrow focus or those taught on an irregular basis may be offered.
Prerequisites may be required. New courses may be taught on an experimental basis under this title.

Business Administration

Chairperson:
Howard Cox

Professors:
Howard Cox
George Murphy
Louis Zivic

Assoc. Professors:
Martin Cusack
Joseph McAloon

Asst. Professors:
Diane Caggiano
Sylvia Charland
David Carey
James Conlin
Robert Kelleher
Francis Morrison
James Noonan
Harold Schonbeck
Gary Vostok
Charles Wellens

Introduction

The objectives of the Business Administration Department are to prepare each student to take a responsible position within the world of business equipped with a knowledge of business theories, policies, and procedures. The program also develops and refines a commitment to human values and moral excellence as well as professional competence. These objectives are accomplished through a curriculum which is based in the liberal arts, coupled with a sufficient mix of professional courses and a variety of "hands-on" business experience.

Admission to the Business Administration Department is competitive. The applicants who are best prepared for admission will have completed a college preparatory program in high school. It is advisable that students have success fully completed four years of mathematics through precalculus.

The Major in Business Administration

Degrees Offered

The degree offered by the Business Administration Department is the Bachelor of Science degree.

Concentrations/Options

The Business Administration Program at Fitchburg State College includes concentrations in either of four areas of business: accounting, management, marketing, or management information systems.

Core Curriculum

Principles of Accounting I and II, Business Law I, Basic Finance, Principles of Management, Fundamentals of Marketing, Economics I and II, Introduction to Business Data Processing, Business Calculus, Business Statistics.

The courses beyond the core curriculum are open only to Business Administration majors. These upper-level courses are not transferrable from another College if they are required within a student's concentration.

Accounting Curriculum

Intermediate Accounting I and II, Business Law II, Cost Accounting I and II, Tax Accounting, Auditing, Advanced Accounting I and II, Business Policy and Strategy.

Management Curriculum

Production Management, Human Resources Management, Business Fluctuations and Forecasting, Organizational Behavior and Theory, Social and Political Environment of Business, Business Policy and Strategy, and Managerial Accounting.

Management Information Systems Curriculum

Introduction to Business Data Processing, Systems Analysis Methods, Structured Systems Analysis and Design, Computer Concepts and Programming Techniques, COBAL I and II, DataBase Management Systems, Applied Software Development, Managerial Accounting, Business Policy and Strategy, and Organizational Behavior and Theory.

Marketing Curriculum

Advertising, Consumer Behavior, Market Research, Managerial Accounting, Business Policy and Strategy, and three marketing electives.

Internship Program

Business Administration Internship

The Business Administration Department offers its students the opportunity for experiential learning through its Internship Program. The internship is a semester experience that occurs in either the second semester of the Junior year or the first semester of the Senior year. Students are placed in positions that coincide with the concentration of study. While the student is working at a host company, the individual earns 6 (part-time) or 12 (full-time) credits. In addition to the work experience, the student is required to write a comprehensive paper. In order to participate in the Internship Program, a student must have a 3.0 average in business courses and a minimum of 2.5 overall cumulative average. The Internship Program is structured to give the participant an opportunity to apply the theory of the classroom to a specific work experience.

The Minor in Business Administration

The minor in Business Administration consists of eighteen credits. The following four courses are required: Accounting I, Business Law I, Principles of Management, Fundamentals of Marketing and two business electives. Two of the four required courses may be transferred from another college. Students minoring in Business Administration may take a maximum of two upper-level courses. These courses must be taken at Fitchburg State College and they must be approved by the Department Chairperson.

Special Information

The Montachusett Economic Center (MEC), started at Fitchburg State College by President Vincent J. Mara in 1981, employs college students and professors to provide management and marketing assistance to a wide variety of local business and organizations. These endeavors take the form of marketing research projects, management and marketing audits, small business assistance, seminars, on-line database searching, technology transfer, and other demographic and economic studies.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses, "IDIS" designates interdisciplinary courses.

BSAD 1700 **3 cr. 4 hr.**
Introduction to Business Data Processing
An overview of Computer Information Systems, this course introduces the student to computer information science and its applications. The student will develop literacy in the computer and its uses. The laboratory work includes an introduction to Word Processing, Spreadsheets, Databases, and the fundamentals of programming with BASIC. No previous knowledge of computers is required or presumed. The three credits are divided into two hours of lecture and two hours of

laboratory. Credit will not be awarded for both BSAD1700, Introduction to Business Data Processing and CSC1100, Computer Applications. See Business Administration Department Chair for alternate course selections.
Prerequisite: Basic Math II.

BSAD 2100 3 cr. 3 hr.
Principles of Accounting I
This course examines basic accounting theory and its application. The course includes the accounting equation, journalizing, posting and trial balance, adjusting and closing procedures, preparation of financial statements, use of special journals, receivables and payables, merchandise inventory, accounting systems and processes.
Prerequisite: BSAD 1700.

BSAD 2110 3 cr. 3 hr.
Principles of Accounting II
This course deals with the more complex forms of business: partnerships and corporations, capital stock and bonds, retained earnings, income taxes and cost analysis.
Prerequisite: BSAD 2100.

BSAD 2700 3 cr. 3 hr.
Business Problem Solving with Microcomputers
This course will use the computer as a tool to solve business problems. Problem definition, analysis of problem, solution design, and implementation will be phases leading toward the development of a business application system.
Prerequisite: BSAD 1700.

BSAD 3100 3 cr. 4 hr.
Intermediate Accounting I
In this course emphasis is placed on the application of accounting theory to practice problems in order to develop financial statements of proper form and content. The relationship between various financial statements is constantly reaffirmed. Asset items of the balance sheet are treated comprehensively.
Prerequisite: BSAD 2110.

BSAD 3110 3 cr. 4 hr.
Intermediate Accounting II
Liabilities, reserves, funds and stockholders equity items are thoroughly treated. In addition, other topics are covered.
Prerequisite: BA 3100.

BSAD 3120 3 cr. 3 hr.
Cost Accounting I
The control aspects of material, labor, and overhead accounting are stressed. The course covers various cost accounting systems and profit planning.
Prerequisite: BSAD 2110.

BSAD 3130 3 cr. 3 hr.
Cost Accounting II
This course covers planning of profits, costs, and sales through the use of budgets, cost behavior analysis, and cash forecasts. The course introduces direct costing, standard costing, and conventional gross profit analysis. It emphasizes the uses of cost accounting data for policy making and decision making purposes through breakeven analysis, capital budgeting, differential and comparative cost analysis.
Prerequisite: BSAD 3120.

BSAD 3140 3 cr. 3 hr.
Managerial Accounting
This course stresses the usefulness of accounting data as it relates to the managerial decision making process. Computer applications are integrated with the broad objectives relative to planning, control, and analysis. Among the multifaceted areas of study are financial statement analysis, budgeting standard cost analysis, and capital expenditure planning and control.
Prerequisite: BSAD 2110.

BSAD 3200 3 cr. 3 hr.
Principles of Management
This is an introductory course in basic management concepts and practices. This course covers principles and techniques as they relate to planning, organizing, leading, and controlling business enterprises.

BSAD 3210 3 cr. 3 hr.
Human Resources Management
This is an introductory course which surveys human resources practices and procedures involved with recruiting, employment, training and development, job evaluation, compensation, health and safety, labor relations, and workplace law. Special topics of student interest will also be covered.
Prerequisite: BSAD 3200.

BSAD 3220 **3 cr. 3 hr.**
Production Management
The basic principles of production management related to the effective utilization of the factors of production in manufacturing and non-manufacturing activities for both intermittent and continuous systems are discussed. The course will also study production organizations, analytical models and methods, facilities design, and the design of control systems for production operations.
Prerequisite: BSAD 3200.

BSAD 3300 **3 cr. 3 hr.**
Fundamentals of Marketing
This course discusses the role of marketing in our economic and social structure. It includes the planning, distribution, pricing and promotion of goods and services to consumer and industrial markets, viewed as internal activities of the firm, and as shaped by environmental forces.

BSAD 3310 **3 cr. 3 hr.**
Consumer Behavior
This course will familiarize the student with the consumer decision making processes. It will utilize the concepts of the social and behavioral sciences in order to provide an understanding of consumer buying behavior.
Prerequisites: BSAD 2110, 3200, 3300, 3500.

BSAD 3320 **3 cr. 3 hr.**
Market Research
This course will emphasize the importance of research in marketing planning and decision making. It will include the basics of scientific investigation, the search for information, sampling, data collection, data analysis, interpretation and reporting.
Prerequisites: BSAD 2110, 3200, 3300, 3500, MATH 1800.

BSAD 3330 **3 cr. 3 hr.**
Advertising
Topics in this course will include the functions of advertising, planning and advertising campaign copy, artwork and media selection. Students will become knowledgeable about the preparation and use of advertising.
Prerequisites: BSAD 2110, 3200, 3300, 3500.

BSAD 3400 **3 cr. 3 hr.**
Basic Finance
This course studies the forms and sources of financing business firms, large and small, corporate and noncorporate. The emphasis is on financial planning and developing judgment in formulating decisions on financial problems.
Prerequisite: BSAD 2110.

BSAD 3410 **3 cr. 3 hr.**
Investments
An analysis of stocks, corporate and governmental bonds and other investment media, and a study of the secondary stock market mechanism. This course will review various investment vehicles and security evolution. Research of individual companies and industries will be required. Course will be primarily lecture and problem solving.
Prerequisites: BSAD 2110, 3200, 3300, 3400, 3500.

BSAD 3440 **3 cr. 3 hr.**
Real Estate Principles and Practices
Explores Real Estate use, ownership and development from a business perspective. It will consider the social impact and the business constraints. Will consider the effect of home ownership on executive transfers and company costs. Will study current terminology in the field to include property rights, owner ship, financing, planning for the future, property evaluation, and property management.
Prerequisite: BSAD 3200.

BSAD 3460 **3 cr. 3 hr.**
Real Estate Investment & Management
The investment, financing, and management of real estate with a particular emphasis toward business decision. This course will focus on real estate as an investment good. Its popularity as an investment vehicle can be attributed to a number of income-producing characteristics of which the following are noteworthy: emphasis on 1) cash flow, 2) changing property values, 3) equity investor, 4) decision-making, 5) risk and return and 6) market research.
Prerequisites: BSAD 2110, 3200, 3300, 3400, 3500.

BSAD 3500 **3 cr. 3 hr.**
Business Law I
This course is an introduction to the study of business law, its nature and classification, the court systems and their procedures. Contract law, the law of sales, and personal property are comprehensively dealt with.

***BSAD 3630** **3 cr. 3 hr.**
Collective Bargaining Methods
After a discussion of strategies and tactics used in labor negotiations, this course will evolve from simulated contract negotiations. It will give the student first hand knowledge of what goes on at the bargaining table.
Prerequisites: BSAD 3200, 3210, 4610.

***BSAD 3640** **3 cr. 3 hr.**
Labor Organization and Trade Unionism
This course will provide the student with the knowledge of how unions are organized and operate in the nation. It will include a presentation of the development of craft and industrial unions, the anatomy of local and national labor organizations and of union organizing, and an analysis of the political and economic position of labor unions in the country today.
Prerequisites: BSAD 2110, 3200, 3300, 3500.

BSAD 3710 **3 cr. 3 hr.**
Systems Analysis Methods
An overview of the systems development life cycle, this course introduces the student to the fundamental concepts and techniques of systems analysis and design. Classical and structured methods of systems documentation are explored as well as information gathering and reporting activities. Finally the transition from systems analysis to design is discussed.
Prerequisites: CSC 2700, CSC 2750.

BSAD 3720 **3 cr. 3 hr.**
Computer Concepts and Programming Techniques
This course is a survey of technical topics related to computer systems with emphasis on the relationship between computer architecture, system software, and applications software.
Prerequisites: BSAD 3710, CSC 2700.

BSAD 4100 **3 cr. 3 hr.**
Advanced Accounting I
This course includes accounting problems involved in the preparation of consolidated financial statements and in home and branch office relationships. The accounting concepts of purchase and pooling of interests are stressed.
Prerequisite: BSAD 3110.

BSAD 4110 **3 cr. 3 hr.**
Advanced Accounting II
This course examines the accounting principles and reporting procedures in multinational accounting, partnerships, governmental entities, colleges and universities, health care providers, and bankruptcy.
Prerequisite: BSAD 4100.

BSAD 4120 **3 cr. 3 hr.**
Tax Accounting
This course considers the Massachusetts and Federal Income Tax Laws, with application to individuals, partnerships, fiduciaries, and corporations.
Prerequisite: BSAD 3110.

BSAD 4130 **3 cr. 3 hr.**
Advanced Taxation
This course will study the Federal income tax laws and regulations applicable to partnerships, corporations, and fiduciaries. Federal gift and estate taxes, reorganizations, and personal holding companies will also be discussed.
Prerequisite: BSAD 4120.

BSAD 4140 **3 cr. 3 hr.**
Auditing
The basic concepts of auditing and control are examined in this course. It emphasizes internal control, audit problems, and professional responsibilities of the C.P.A. to the auditing requirements.
Prerequisites: BSAD 3110, 3130.

***BSAD 4160** **3 cr. 3 hr.**
Agency Fund Accounting
This course will examine the accounting and reporting principles, standards, and procedures applicable to governmental and not-for-profit entities, such as governmental organizations, hospitals, colleges and universities.
Prerequisites: BSAD 3110, 3130.

BSAD 4200 **3 cr. 3 hr.**
Organizational Behavior and Theory
This course is a general descriptive and analytical study of organizations from the behavioral science point of view. It includes problems of motivation, leadership, morale, social structure, group networks, communications, hierarchy, and control in complex organizations. The interaction between technology and human behavior is discussed. Consideration of alternative theoretical models is given.
Prerequisites: PSY 1100, BSAD 3200, 3300, 3500.

BSAD 4210 **3 cr. 3 hr.**
Social and Political Environment of Business
This course is a study of the evolution of American business in the context of its changing political and social environment. Analysis of the origins of the American business creed, the concept of social responsibility of business, and the expanding role of the corporation are included.
Prerequisites: ECON 1000, BSAD 3200, 3500.

BSAD 4230 **3 cr. 3 hr.**
Business Fluctuations and Forecasting
This course is an analysis of the operations of our free enterprise system with emphasis on the factors responsible for economic instability, analysis of public and business policies which are necessary as a result of business fluctuations.
Prerequisites: ECON 1200, MATH 2800.

BSAD 4250 **3 cr. 3 hr.**
Ethical Decisions in Business
This course is designed to explore, discuss, and analyze the values and methods that can be used by our future business managers to make ethical decisions in live business situations. It will provide a basis for consideration of the type of corporate policy and environment essential to minimizing the conflict between "right" and "the end justifies the means."

BSAD 4300 **3 cr. 3 hr.**
Sales Management
This course will enhance the students' understanding and skills in managing the selling function. The emphasis is on personal selling as an element in the marketing mix.
Prerequisites: BSAD 2110, 3200, 3300, 3500.

BSAD 4310 **3 cr. 3 hr.**
Retail Marketing
This course introduces the student to the nature and scope of retail marketing and management. The course will include the structure of retailing, merchandising, buying, pricing, promotion, organization and management of the retail firm.
Prerequisites: BSAD 2110, 3200, 3300, 3500.

BSAD 4320 **3 cr. 3 hr.**
Industrial Marketing
This course centers on the marketing of goods to industrial firms, governmental agencies, and other organizations included within the industrial market. The areas covered in the course will include distribution channels, pricing policies, product planning and market strategy.
Prerequisites: BSAD 2110, 3200, 3300, 3320, 3330, 3500.

BSAD 4330 **3 cr. 3 hr.**
International Marketing
This course will concentrate on the marketing activities of firms operating in an international market. It will provide the student with an understanding of the factors that influence the selling of products in international markets. It will include the planning, organizing, and controlling of international marketing, along with its law, history, and economics.
Prerequisites: BSAD 2110, 3200, 3300, 3320, 3330, 3500.

BSAD 4340 **3 cr. 3 hr.**
Developing Marketing Strategies
Through the use of case studies and, where possible, cooperating businesses and nonprofit organizations, students will identify the pertinent marketing problems and opportunities, assess the organization's resources, and develop viable marketing programs. The course will include new product development and management

strategies for effective marketing policies over the course of the entire product life cycle.
Prerequisites: BSAD 2110, 3200, 3300, 3320, 3330, 3500.

BSAD 4440 3 cr. 3 hr.
Financial Management of Corporations
This course covers the analysis and management of the flow of funds through an enterprise. Cash management, source, and application of funds, term loans, types and sources of long term capital. Capital budgeting, cost of capital, and financial structure. It is an introduction to capital markets.
Prerequisite: BSAD 3400.

BSAD 4500 3 cr. 3 hr.
Business Law II
This course is a continuation of Introduction to Business Law and deals with the law of agency, commercial paper, credit, and the various forms of business.
Prerequisite: BSAD 3500.

***BSAD 4610 3 cr. 3 hr.**
Labor Relations and Collective Bargaining I (Private Sector)
An in-depth study of fundamental labor relations issues: the development of federal labor policy, union organization and union organizing, collective labor-contract negotiation, contract enforcement and the use of strikes and lockouts, boycotts and picketing, and multi-employer bargaining, arbitration and grievance procedure, health, welfare, and safety concerns, equal employment opportunity, labor economics, and state and federal labor legislation, and the role of government in labor disputes.
Prerequisite: BSAD 3210.

***BSAD 4620 3 cr. 3 hr.**
Labor Relations and Collective Bargaining II (Public Sector)
A continuation of BSAD 4610. A significant part of the second semester will consider public sector collective bargaining and organizing (local, state, and national, and within healthcare organizations).
Prerequisite: BSAD 4610.

***BSAD 4630 3 cr. 3 hr.**
Labor and Management Relations
This course involves an investigation of the American Labor Movement. It is an analytical account of what labor is, why it behaves the way it does, and how it is managed. The course will also cover the various organizational forms and models of labor unions.

***BSAD 4640 3 cr. 3 hr.**
Labor Law I
A course relating basic labor issues to the legal process. The study begins with a brief history of U.S. labor in the courts, tracing the development of national labor policy in the twentieth century, embodied in the National Labor Relations Act and in related federal law and regulation. The course then considers the role to the National Labor Relations Board and federal courts in determining whether labor organization conduct or employer conduct constitute unfair labor practices under the Act. The course relies mainly on primary materials, both state and federal court decisions, and administrative opinions.

***BSAD 4650 3 cr. 3 hr.**
Labor Law II
A continuation of BSAD 4640.
Prerequisite: BSAD 4640.

BSAD 4700 3 cr.
Structured Systems Analysis and Design
This course covers the methodology of structured systems development concentrating on the analysis and design phases of the system development cycle. A case approach to advanced concepts, it is a course in problem solving wherein the student learns strategy and techniques for dealing with complexities in Information Systems Development.
Prerequisites: BSAD 3710, CSC 2700, CSC 2750.

BSAD 4720 3 cr. 3 hr.
DataBase Management Systems
This course provides an introduction to the concepts of database processing with emphasis on application programming in a database environment. Physical and logical organization of data, data relationships and operational requirements of a database management system are also discussed.
Prerequisites: BSAD 3710, CSC 2700, CSC 2750.

BSAD 4730 **3 cr. 3 hr.**
Applied Software Development
As the capstone course in the MIS concentration, this course requires the student to apply concepts, principles, and problem solving techniques, strategies and tools learned in previous MIS and business courses to the development of a realistic computer based information system of medium complexity.
Prerequisite: BSAD 3720.

BSAD 4890 **3 cr. 3 hr.**
Business Policy and Strategy
This is an integrating course embracing all organic management functions. Cases are used as subjects for analysis and systematic decision making practice.
Prerequisite: senior status in Business Administration or permission of Department Chairperson.

BSAD 4903 Independent Study-Management
BSAD 4913 Independent Study-Accounting
BSAD 4923 Independent Study-Marketing
BSAD 4933 Independent Study- MIS
Study of specific, advanced topics in the area, requires approval of supervising instructor and the department.

BSAD 4950 **6 cr.**
Internship
This course is a part time (18 hr. week) internship in either the private or public sector. The purpose of the course is to allow the student the opportunity to synthesize the theoretical learning of the classroom with a practical work situation.
Prerequisite: Approval by Internship Director.

BSAD 4970 **12 cr.**
Internship
This course is a full semester (36 hr. week) internship in either the private or public sector. The purpose of the course is to allow the student the opportunity to synthesize the theoretical learning of the classroom with a practical work situation.
Prerequisite: Approval by Internship Director.

BSAD 5000 **3 cr. 3 hr.**
Topics in Business
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Chemistry

Chairperson: *Judith Ciottone*

Assoc. Professor: *Pushkar Kaul*, *Da-hong Lu*

Professors: *Judith Ciottone*, *Daniel V. Robinson*

Asst. Professors: *Vesselin Noninski*

The Major in Chemistry

The degree of Bachelor of Arts in Chemistry must include General Chemistry I, General Chemistry II, Organic Chemistry I, Organic Chemistry II, Analytical Chemistry I, Analytical Chemistry II, Physical Chemistry I, Physical Chemistry II, General Physics I, General Physics II, Calculus I, Calculus II, and at least three semester hours of Chemistry electives at or above Advanced Inorganic Chemistry. General Physics III is recommended for all Chemistry Majors and proficiency in German, French or Russian at the second year level is required for the Bachelor of Arts.

The Bachelor of Science in Chemistry must include General Chemistry I, General Chemistry II, Organic Chemistry I, Organic Chemistry II, Analytical Chemistry I, Analytical Chemistry II, Physical Chemistry I, Physical Chemistry II, Introduction to Pascal, Data Structures, General Physics I, General Physics II, Calculus I, Calculus II, and at least three semester hours of electives in Chemistry at or above Advanced Inorganic Chemistry. General Physics III is recommended.

The Minor in Chemistry

A minor in Chemistry consists of General chemistry I and II, Organic Chemistry I and II and Analytical Chemistry I in addition to one course selected from Analytical Chemistry II, Physical Chemistry I, Physical Chemistry II, Advanced Inorganic Chemistry, or Radiation Chemistry.

Course Offerings

*Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses, "IDIS" designates interdisciplinary courses.

CHEM 1000 **4 cr. 6 hr.**
Industrial Chemistry
Introduction to chemistry. Course includes periodic table, atomic structure, electrochemistry, thermochemistry, chemical bonding, kinetics, oxidation-reduction, acids-bases, thermodynamics, and a brief introduction to organic compounds.
Prerequisite: MATH 1300.

CHEM 1100 **4 cr. 5 hr.**
Chemistry I
Fundamentals of chemistry for non-science majors. This course is largely limited to inorganic concepts.

CHEM 1200 **4 cr. 5 hr.**
Chemistry II
Continuation of (and prerequisite) Chemistry I or the equivalent. It also involves a study of organic chemistry and biochemistry.

CHEM 1300 **4 cr. 6 hr.**
General Chemistry I
The fundamental laws and theories of chemistry such as atomic structure, the periodic table, electrochemistry, descriptive inorganic chemistry, the gas laws, solutions, and chemical bonding. Chemical calculations are emphasized.

CHEM 1400 **4 cr. 6 hr.**
General Chemistry II
Continuation of (and prerequisite) General Chemistry I or the equivalent.

CHEM 2000, 2100 **4 cr. 6 hr. each**
Organic Chemistry I and II
Properties of organic compounds are discussed in terms of their molecular structures and reaction mechanisms. Recommended for chemistry majors, and/or others contemplating graduate study, and for those who feel the need for a solid theoretical foundation.
Prerequisites: CHEM 1300 and 1400.

CHEM 3000 **4 cr. 6 hr.**
Analytical Chemistry I
Emphasis on theory and application of Quantitative Analysis. The lectures stress chemical equilibrium, solubility product, complexometric formation, oxidation-reduction, and stoichiometric calculations.
Prerequisites: CHEM 1300 and 1400 or the equivalent.

CHEM 3200 **4 cr. 6 hr.**
Physical Chemistry I
The underlying principles of chemistry from a physical chemistry standpoint. Kinetic theory, theories of the structure of matter, theory of electrolytic solutions, electrochemistry, thermodynamics, and kinetics.
Prerequisite: CHEM 2100 or the equivalent.

CHEM 3300 **4 cr. 6 hr.**
Physical Chemistry II
Continuation of (and prerequisite) CHEM 3200.

CHEM 3500 **4 cr. 6 hr.**
Analytical Chemistry II
Essentially a laboratory course in Instrumental Analysis including three hours of lecture per week. Laboratory experiments include spectrophotometric, conductometric, potentiometric, and chromatographic analysis.
Prerequisite: CHEM 2100 or the equivalent.

Advanced Topics

Student and faculty availability determine the following course offerings.

***CHEM 3600** **3 cr. 3 hr.**
Advanced Inorganic Chemistry
Valancy theories, acid-base theories, reactions in non-aqueous solvents, complexation and chelation, and physical measurements.
Prerequisite: CHEM 1400 or the equivalent.

***CHEM 4000** **3 cr. 6 hr.**
Natural Products
Chemistry isolation, purification, and identification of pure compounds from a variety of naturally occurring substances. Special techniques will be introduced whenever feasible. Six hours of laboratory.
Prerequisites: CHEM 2000 and 2100.

CHEM 4100 **4 cr. 6 hr.**
Biochemistry (See BIOL 3450).
Prerequisite: CHEM 2100.

***CHEM 4200** **4 cr. 6 hr.**
Polymer Chemistry
An introduction to the synthesis and properties of macromolecules which also serves as an application of chemical principles to this interesting and important group of materials. Two hours of lecture and one four-hour laboratory period.
Prerequisites: CHEM 2000 and 2100 or the equivalent.

CHEM 4300 **4 cr. 4 hr.**
Radiation Chemistry
Fundamentals of radiation chemistry, including radioactivity, atomic nuclei, nuclear reactions, decay systematics, reactors, and radiation detection and measurement with emphasis on the use of radioactive materials in chemical applications.
Prerequisites: CHEM 1400, PHYS 1400.

CHEM 4903 **1 to 3 cr.**
Independent Study in Chemistry
Laboratory research under guidance of the Chemistry staff.
Prerequisite: Permission of the Instructor.

CHEM 4940 **3 cr.**
Internship
Assigned work in an industrial, government, or private research laboratory to give experience in the student's major.

CHEM 4950 **6 cr.**
Internship
Assigned work in an industrial, government, or private research laboratory to give experience in the student's major.

CHEM 5000 **3 cr. 3 hr.**
Topics in Chemistry
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Communications/ Media

Chairperson:
Charles Sides

Professors:
George Bohrer
Lee DeNike
Peter Laytin
Helen Obermeyer-Simmons
David Ryder
Charles Sides

Assoc. Professors:
Ann Mrvica
Bonnie House
Wayne Munson
Jacqueline LaCoy

Asst. Professors:
Elliot Hoffman
Gunther Hoos
Elena Kyle

The Communications/Media Program prepares individuals to assume communication positions as free-lancers, independent producers or employees of corporations, institutions, and media organizations. The program provides a blend of the principles and practices necessary for the effective design, production, and evaluation of media for information presentation by graphic, photographic, film, television, electronic, and print technologies. In addition, this program, in combination with the Liberal Arts and Sciences Program, fosters the development of those life long skills critical to adapting to an ever changing technological and knowledge based society.

Concentrations in Communications/Media

The Communications/Media program offers concentrations in six areas: technical communications, television/film production, photography, graphic design, interactive communication, communications studies. Students should meet with their advisors to determine which concentration best meets their career aspirations.

The Major in Communications/Media

The Bachelor of Science degree in Communications/Media requires 54 semester hours. Course requirements are organized into three phases.

Phase I Conceptual/ Methodological Studies

Phase I exposes students to the concepts and practices used in the preparation, delivery, evaluation, and research of verbal and visual messages. Four courses are required with two additional courses elected in consultation with the advisor.

Required Courses: COMM 1100, COMM 1120, COMM 3450, COMM 4200.
Elective Courses: COMM 1130, COMM 4210, COMM 4220, COMM 4230, COMM 4240, COMM 4250, COMM 5000.

Phase II Applied Studies

Phase II enables students to become involved with an in-depth investigation of an area in communications which is most closely aligned with individual talents and interests. Students must select and complete one concentration with consent of their advisor. A minimum of seven courses must be taken within a concentration, as well as at least one course in another concentration.

Technical Communication Concentration

Required Courses: COMM 3430, COMM 2320, COMM 3460, COMM 3470, COMM 3450.
Elective Courses: COMM 2800, COMM 3480, COMM 3870.

Television Production Concentration

Required Courses: COMM 2300, COMM 2320, COMM 3500, COMM 3510, COMM 3520, COMM 3540.
Elective Courses: COMM 3530, COMM 3550, COMM 3560, COMM 3570, COMM 3580, COMM 3730.

Photography Concentration

Required Courses: COMM 3600, COMM 3610, COMM 3620
Elective Courses: COMM 3630, COMM 3640, COMM 3660, COMM 3670, COMM 3680, COMM 3690.

Film Production Concentration

Required Courses: COMM 2300, COMM 2320, COMM 3580, COMM 3700, COMM 3710, COMM 3720, COMM 3740.
Elective Courses: COMM 3530, COMM 3550, COMM 3730.

Graphic Design Concentration

Required Courses: COMM 3810, COMM 3820, COMM 3880, COMM 3890.
Elective Courses: COMM 2330, COMM 3830, COMM 3840, COMM 3850, COMM 3900, COMM 3910, COMM 3920.

Interactive Communication

Required Courses: COMM 2300, COMM 3310, COMM 3480, COMM 3500, COMM 3510, COMM 3520, COMM 3560, COMM 3810.
Elective Courses: None Necessary.

Communications Studies Concentration

This concentration provides for advanced studies of the theoretical constructs necessary for strategic analysis, design, application, research and evaluation of a variety of media systems. It provides foundational preparation for graduate studies in communications and a number of allied fields.

Requirements: Phase I, COMM 1130, COMM 4230, COMM 4240, COMM 4250, a minimum of 3 to 4 courses in one concentration, 2 to 3 communication electives, and phase III.

Phase III Integrated Studies

This required senior level phase provides an opportunity for students to apply their knowledge and skills in a professional environment.
Required Course: COMM 4880.

Enrichment Courses

The department offers courses which allow a student to pursue an interest not provided for by the curriculum. These courses are restricted to Juniors and Seniors and may be applied to a concentration as an elective with the consent of the advisor and concentration coordinator. These courses include: COMM 4260, COMM 4901, COMM 4902, COMM 4903, COMM 4906, COMM 4940, and COMM 4950.

Liberal Arts and Sciences Courses

Four courses offered by the department qualify for Liberal Arts and Sciences credit. These include:

COMM 2400, COMM 2410, COMM 2420, and COMM 2430.

The Minor in Communications/Media

An interdisciplinary minor in graphics is offered in conjunction with the Computer Science and Industrial Technology Departments. See Graphics in this catalog for an explanation of program requirements.

The "Visions" Honors Show

Each April the Communications/ Media Department faculty hosts a juried honors exhibit of the best student work from all concentrations. Photographic, written, interactive, and graphic work are displayed in the campus gallery, while films, videotapes, and multi-image programs are shown in the campus screening room. The "Visions" show is an important recognition of the professional and artistic work done by Communications/Media students.

Course Offerings

*Asterisk indicates that the course may be offered less than once every two years.

"C" designates multicultural courses, "IDIS" designates interdisciplinary courses.

COMM 1100 **3 cr. 3 hr.**
Communication Theory
A broadbased introduction to the ways in which people think about, analyze, and understand the process and influence of communication. Subjects include functions and uses of media, historical analysis, controls of media systems, effects theories, and intercultural communication. Emphasis is placed on the manner in which theory relates to professions in the media.

COMM 1120 **3 cr. 3 hr.**
Message Design
An introduction to visual communication for the development of visual literacy. Students will become involved with a variety of activities in previsualization, planning, designing, making and evaluating visual messages. This course specifically relates to the communications concentrations taught in Phase II: technical writing, television, photography, film, interactive, and graphic design.

COMM 1130 **3 cr. 3 hr.**
Introduction to Communications Systems
A study of selected social and technological systems of communication. Focuses upon sources and development of ideas basic to these systems as well as the physical relationships in the encoding, decoding, and storage of communication transmission systems. Topics include: electronic communication systems, film, graphics, photography, print, radio, and television.

COMM 2320 **3 cr. 3 hr.**
Script Writing
A basic course in script writing for film, television, and multi-image productions including preparation of proposals, treatments, storyboards, and scripts. Script formats will include documentary, educational, corporate, and dramatic film/video writing. See also ENGL 2320.

COMM 2330 **3 cr. 3 hr.**
Color Theory
An introduction to the basic principles of color as they relate to graphics, film, photography, and television. Emphasis is given to color's physical, psychological, and perceptual components.

COMM 2400 **3 cr. 3 hr.**
History of Photography
A survey of the development of photography to the present day.

COMM 2410 **3 cr. 3 hr.**
History of Film
A study of the narrative and documentary films by American and foreign directors. Films will be screened in each class and discussed. Discussion and lectures will range from the artistic and cultural to the psychological and commercial aspects of films. Students will write several critiques and a term paper.

***COMM 2420** **3 cr. 3 hr.**
History of TV
A comprehensive analysis of television broadcasting from its inception to the present. Programming, social, and technological aspects of the medium

will be presented and examined in a lecture and seminar format. Particular emphasis will be placed on television's sociological influence and impact on the communication process.

***COMM 2430 3 cr. 3 hr.**
History of Graphic Design
A history of typography and styles of art as they relate to graphic design from early Greek civilization to the late twentieth century. Particular attention will be paid to the avant garde typography of the early twentieth century and its influence on present day graphic designers. Study of various media used in graphic design, as well as computer graphics, will be noted.

COMM 2800 3 cr. 3 hr.
Journalism
Studies of the press. Individualized writing assignments. Emphasis on ethics in news, treatment of contemporary issues, and structuring the news story. (Credit will not be given for both COMM 2800 and ENGL 2800.)
Prerequisites: ENGL 1100, ENGL 1200.

COMM 3310 3 cr. 3 hr.
Interactive Communications Systems Design
A study of the design options and connectivity between hardware and software used in interactive communications. Topics include CD video, graphic overlay strategies, digital audio, voice synthesis/recognition, interactive video, design strategies, and communications alternatives. Students will design systems for corporate and academic environments and use an authoring system to create their designs.

COMM 3430 3 cr. 3 hr.
Writing for Broadcast Advertising
An opportunity to research a market, analyze the target audience, create the advertising concept, write the commercial, prepare the storyboards, and consider the problems of casting, directing, and producing the spot.

COMM 3450 3 cr. 3 hr.
Writing for the Professions
An analysis of the process of writing for the media, as well as for a variety of audiences, purposes, and presentational contexts. Emphasizes basic concepts of clarity, approach, sources and organization of information, style, tone, editing, and revision.
Prerequisites: ENGL 1100, ENGL 1200, Junior Status.

COMM 3460 3 cr. 3 hr.
Public Relations
Treatment of definitions and concepts, history, potential careers, and research methods. The focus is on the role of managed communications in public relations unique to industry, human services, and educational institutions.

COMM 3470 3 cr. 3 hr.
Technical Documentation
An opportunity to study and write the basic forms of technical documentation found in business and industry, including end-user manuals and training guides. Examination of graphics, typography, and desktop publishing will be considered as they apply to hardcopy production. (See also ENGL 3470.)

COMM 3480 3 cr. 3 hr.
Writing for Interactive Communication
A consideration of uses of interactive communication as they apply to training and instruction. Students will select a topic and write a script suitable for interactive use. Message switching, text editing, and graphic design will be examined.

COMM 3500 3 cr. 3 hr.
Introduction to Film and Television
This is the foundation course for the TV/Film concentration. Here students are introduced to the basics of production and post-production in the two media. Topics include: understanding and using visual language; film and television camera operation; understanding the film and television production process; basic film and television editing; production crew structure; interpersonal communication. Students will shoot super 8 film and video tape. Editing will be done in both film and video. Student purchase of film, processing and video tape is required.
Prerequisites: COMM 2320.

COMM 3510 **3 cr. 3 hr.**
Studio Applications and Techniques
This is a technical television course, taught in the studio environment. It teaches the professional technical competencies required for production and post-production work in the subsequent courses. Among the topics studied are: understanding how television cameras and recorders function; camera adjustments, controls and calibration; filters, metering and image quality control; location and studio sound recording; use of time code; studio production with single and multiple cameras; camera support; use of studio sets; tape editing systems and techniques; studio control operations; crew responsibilities; location shooting procedures and interpersonal communications. Note: The department recommends that this course be taken at the same time as COMM 3580.
Prerequisite: COMM 3500.

COMM 3520 **3 cr. 3 hr.**
Electronic Field Production (EFP)
A focus on development of the skills necessary for non-studio on-location television production including: shooting and recording with color EFP equipment, location sound recording, location lighting, directing, electronic editing and other post-production techniques. Student purchase of videotape is required.
Prerequisites: COMM 3500, COMM 3510.

COMM 3530 **3 cr. 3 hr.**
Post-Production
This is an intensive course in film and video editing, as well as other post-production techniques. The course is based on the use of non-linear editors, the AVID 400 and 4000 Media Composers. Students will log films and videos shot in previous classes on the AVID MediaLog, digitize their material to the AVID 400 and edit an off-line version of their program. They then re-digitize at high resolution on the AVID 4000, add titles, special effects and mix sound. Finally they print their completed program to tape. This course includes work in editing theory, sound effects recording, narration recording and multi-track sound mixing. In addition, field trips to a commercial television post-production facility and to a film negative cutter are included. Students are required to provide their own video tapes.
Prerequisites: COMM 3540 or COMM 3740 or permission of the instructor.

COMM 3540 **3 cr. 3 hr.**
Advanced Television Production
An upper-level production oriented course providing the opportunity to produce work of professional quality. This course draws on the skills of all previous courses. Working in production groups, students write, shoot and begin editing a high-quality television program. Students may choose documentary, corporate or dramatic subjects for this production. Although a preliminary tape edit may be done in this course, the final edit will be completed on the non-linear AVID systems in COMM 3530. Student purchase of all production materials is required.
Prerequisite: COMM 3520.

COMM 3550 **3 cr. 3 hr.**
Production Management
An examination of the fundamentals of production management: production budgets, production scheduling, contracts and agreements, union regulations for actors and crew members, shooting permits, legal implications and financial structures.
Prerequisites: COMM 3520, or COMM 3720.

COMM 3560 **3 cr. 3 hr.**
Interactive Video Production
An introductory course designed to familiarize students with Interactive Video Disk (IVD). Two IVD programs are used in the course to give students an overview of IVD and to acquaint them with the activities and people resources required in the process of making an IVD. Students apply this knowledge in creating an IVD for a given topic. Student purchase of videotape is required.
Prerequisites: COMM 3500, 3510, 3520, COMM 4210.

***COMM 3570** **3 cr. 3 hr.**
Cable Communications
A detailed consideration of the uses and application potential of cable communications. Included are a history of cable television, the implications of cable technology for

home and business, an overview of cable's impact on society, as well as the process involved in cable licensing and renewal.
Prerequisite: COMM 3500.

COMM 3580 3 cr. 3 hr.
Lighting for Television/Film
An introduction to the techniques of lighting, both on location and in the studio. Topics include: the use of lighting instruments; lighting control media and devices; location lighting techniques; studio lighting techniques; camera movement; composition; metering; the use of lenses; electrical and safety considerations; grip techniques and equipment. Note: The department recommends that this course be taken at the same time as either COMM 3510 or COMM 3710. Student purchase of video tape is required.
Prerequisite: COMM 3500.

COMM 3600 3 cr. 3 hr.
Photography I
An introduction to the technical and aesthetic aspects of photography such as exposure techniques, film, paper, and basic 35 mm camera work. Students are responsible for all paper, film, supplies, and mounting materials.

COMM 3610 3 cr. 3 hr.
Photography II
A continuation and refinement of the material covered in COMM 3600. Editing and sequencing along with flash, fill, filtration, and an introduction to the studio will be covered.
Prerequisite: COMM 3600.

COMM 3620 3 cr. 3 hr.
Photography III
An introduction to medium format photography. Lighting, portraiture, and commercial photography will be explored in professionally designed studios. Students are responsible for all paper, film, and chrome processing.
Prerequisite: COMM 3610.

COMM 3630 3 cr. 3 hr.
Large Format Photography
A specialization in 4 x 5 photography and the use of the Zone System. Students are responsible for all paper and film supplies.
Prerequisite: COMM 3610.

COMM 3640 3 cr. 3 hr.
Color Photography
An introduction to the basic theory of color photography. Printing will be emphasized. All work will be C-prints and chromes.
Prerequisite: COMM 3610.

COMM 3660 3 cr. 3 hr.
Photo Management
A study of photographic space design for private, commercial, and educational use. Includes an understanding of flow, function, equipment inventory, record keeping, and budget control.
Prerequisite: COMM 3610.

COMM 3670 3 cr. 3 hr.
Multi-Image Production
A development of skills necessary to plan, produce, and present multi-image productions. The course includes scripting, photography, graphics, programming, sound recording and mixing, as well as the basics of effective multi-image presentation. Students are responsible for all supplies.
Prerequisite: COMM 3610.

***COMM 3680 3 cr. 3 hr.**
Slide Production Techniques
An introduction to the specialized equipment, films, and special processes used in slide production for professional, industrial, medical, and educational applications.
Prerequisite: COMM 3600.

***COMM 3690 3 cr. 3 hr.**
Photography Seminar
An opportunity for advanced study in the medium. Students are responsible for all paper and film supplies.
Prerequisites: COMM 3620, 3630, or 3640.

COMM 3710 3 cr. 3 hr.
Film Production II
Film II introduces the tools of professional motion picture production. Topics include: 16mm sync camera operation; lenses and filters; camera support; shooting tests of several film emulsions; film laboratory procedures; use of sync sound equipment (Nagra and DAT): Location recording techniques; resolving to 16mm magnetic film; sound processing; synchronization of dailies on a flatbed editor. Note: the department

recommends that this course be taken at the same time as COMM 3580.
Prerequisite: COMM 3500.

COMM 3720 **3 cr. 3 hr.**
Film Production III
An advanced examination of professional 16mm production and post-production techniques. Topics include: location shooting, sound recording and editing, film editing, negative matching, and interlock mixing. Students, as part of the course, produce a professional 16mm film. Film and processing costs are shared by all students.
Prerequisites: COMM 3710.

***COMM 3730** **3 cr. 3 hr.**
Directing TV/Film
An examination of the role of the director. Topics include: script analysis; script breakdowns; casting; blocking the camera and the actors; acting; directing actors; relationship of the director to the producer, actor, writer and editor; director relationship to the cinematographer; role of the assistant director; unions and talent agencies; schedules and planning; interpersonal communication. Students are responsible for all materials.
Prerequisite: COMM 3510/3580 or 3710/3580.

COMM 3740 **3 cr. 3 hr.**
Film for TV
In this course students will shoot films on 16mm negative stock and transfer them to video tape for post-production. Topics include: techniques for shooting film for video; telecine techniques; resolving sound to video tape; time code fundamentals; editing video tape; understanding paintbox, digital effects and other post-production techniques; preparing to edit non-linear on the AVID system. Although some editing will be done on tape-based systems, the final edit will be done on the AVID system in COMM 3530. Students are required to purchase film and video tape, as well as processing telecine services.
Prerequisite: COMM 3720.

COMM 3810 **3 cr. 3 hr.**
Graphic Design I
A problem solving approach to graphic design. The course covers the physical and psychological aspects of graphic communication using graphic and typographic forms. Emphasis is on the effects of design on the communication process. Students are responsible for all graphic supplies. (Credit will not be given for both COMM 3810 and IT 2520.)

COMM 3820 **3 cr. 3 hr.**
Graphic Design II
This course deals with advanced graphic design principles and is based on a problem solving approach to graphic design. Students design and prepare highly finished comprehensive layouts. Projects include Marker Layout, Typography, Publication Design, Poster Design, and Corporate Identity. Problems are approached and solutions reached through teamwork and evaluated through joint critique. Students are responsible for all graphic supplies.
Prerequisite: COMM 3810.

COMM 3830 **3 cr. 3 hr.**
Graphic Design III
An opportunity for advanced study in graphic design concentrating on technical and creative illustration. Students will work in various media including pen and ink, water color, marker, and colored pencil.
Prerequisite: COMM 3820.

COMM 3840 **3 cr. 3 hr.**
Graphic Management
A study of the theories and practices of advertising, sales, and marketing management in business, industry, and education with emphasis on the graphic designer in the roles of creative art director, production manager, and designer illustrator.
Prerequisite: COMM 3820.

COMM 3850 **3 cr. 3 hr.**
Publication Design
An exposure to the design of text-intensive pieces. A discussion of the effects of type choice on readability, use of white space, and methods of illustration are included. Problems involve copy casting, type selection, layout and design of multi-paged work, and choice of format and illustration. Students are responsible for all graphic supplies.
Prerequisites: COMM 3820, 3890, or permission of Instructor.

COMM 3860 **3 cr. 3 hr.**
Writing for Business and Technology
A study of writing for students interested in business, industry, and management. Included are business correspondence, description of process and mechanisms, sets of instructions, proposals, abstracts, and reports. (Credit will not be given for both COMM 3860 and ENGL 3860.)

COMM 3870 **3 cr. 3 hr.**
Feature and Magazine Writing
An examination of writing feature articles for newspapers, magazines, and trade journals. (Credit will not be given for both COMM 3870 and ENGL 3870.)

COMM 3880 **3 cr. 3 hr.**
Typography, Comprehensives & Mechanicals
An in depth study of typography, type-specification, copy-fitting, layout, and printing processes with emphasis placed on pre-press "camera-ready" mechanicals. Students use typesetting equipment and layout programs to produce one-color, two-color, and full-color mechanicals. Students are responsible for all graphic supplies.
Prerequisites: COMM 3820.

COMM 3890 **3 cr. 3 hr.**
Electronic Graphic Design
An introduction to the techniques and tools utilized to create, manipulate, and organize the graphic image through the use of electronic media. This course will demonstrate present and future applications of electronically generated images as they relate to the graphic designer. Students will have hands-on experience with computer graphics and electronic publishing hardware and software.
Prerequisite: COMM 3820.

COMM 3900 **3 cr. 3 hr.**
Graphic Design/Photography
An explanation of commercial applications of photography, including product presentation, advertising, illustration, promotion, and publication photography. The designer as a photographer will solve assigned problems using various techniques and materials. Students are responsible for all graphic supplies.
Prerequisites: COMM 3600, 3820.

COMM 3910 **3 cr. 3 hr.**
Graphic Arts Production
An examination of skills necessary to produce printed products. Students will complete projects in computer aided design, utilize CRT typesetters, operate process cameras, prepare printing plates, precisely match ink colors, and print their projects. The very important relationship between the designer and the commercial printer will be emphasized. (Credit will not be given for both COMM 3910 and ITEC 1500.)
Prerequisite: COMM 3810 or permission of Instructor.

COMM 3920 **3 cr. 3 hr.**
Advanced Electronic Graphic Design
An advanced course in computer graphics covering application of electronically generated images as they relate to the graphic designer and the use of computer graphics work stations. Topics of study include: digital typography, illustration systems, and electronic publishing.
Prerequisites: COMM 3820, 3890 or permission of the Instructor.

COMM 4200 **3 cr. 3 hr.**
Human Communications Technology
A study of human relations problems associated with the introduction of communications technology into industry, business, schools, and other public or private agencies. Students conduct an intrapersonal and interpersonal self-inventory to identify those qualities and skills which should be stressed and those which need improvement for shaping their communication with people who may have different attitudes and values toward a particular technology. An in-depth study of the application of communications technology in an assigned corporate or business setting will be conducted.
Prerequisite: Senior status.

COMM 4210 **3 cr. 3 hr.**
Instructional Training Design
An examination of selected learning theories, an overview of various instructional approaches or methods, and the application of the two to instructional communications. Strong

emphasis is given to the application of learning theories to interactive videodisc production.
Prerequisite: Junior status.

COMM 4220 3 cr. 3 hr.
Organizational Communication
An examination of the organizational and management procedures used as vehicles for communication within business and educational institutions.
Prerequisite: Junior status.

COMM 4230 3 cr. 3 hr.
Communications Law and Ethics
An introduction to communications law and media ethics. Issues raised are important for all students in the Communications/Media department. Topics include: copyright law, libel, censorship, cable and broadcast law, privacy, as well as a discussion of the U.S. legal process.
Prerequisite: Junior status.

COMM 4240 3 cr. 3 hr.
Media Criticism
An examination of several approaches, including political, cultural, social, genre and feminist, to evaluating media, especially film and video work.
Prerequisite: Junior status.

COMM 4250 3 cr. 3 hr.
Research Seminar
An opportunity to explore and learn various research methodologies, such as archival research, content analysis, and field study. The seminar will be offered with various focuses, depending upon student and Instructor need and interest.
Prerequisite: Junior status.

***COMM 4260 3 cr. 3 hr.**
Advanced Professional Study
An interdisciplinary production course combining the talents of students from two or more concentrations. Students will learn to work in a production team with a client to produce professional quality video, film, slide-tape, print, graphic, and/or interactive materials.
Prerequisite: Completion of five courses within a concentration.

COMM 4880 12 cr. 36 hr.
Internship
A full semester on- or off-campus internship requiring 15 36-hour weeks of work in which Communications/Media majors apply their knowledge and skills to the practical solution of communications problems.
Prerequisites: Completion of all Phase I and II Communications/Media courses with a cumulative Communications/Media grade point average of 2.5 or better. Approval by Communications/Media Interview Committee.

COMM 4901 1 cr. 3 hr.
COMM 4902 2 cr. 6 hr.
COMM 4903 3 cr. 9 hr.
COMM 4906 6 cr. 18 hr.
Independent Study
An opportunity for highly self motivated students to explore areas of Communications/Media not provided within the departmental curriculum. Research methodology is to be used and a written monograph is to be presented to the faculty sponsor. Approval of a faculty sponsor, consent of the advisor, and permission of the Chairperson is required

COMM 4940 3 cr. 9 hr.
COMM 4950 6 cr. 18 hr.
Field Study
A field experience which permits students to develop the knowledge and skills acquired in the classroom. A portfolio of the work completed is to be presented to the faculty sponsor. Approval of a faculty sponsor, sanction of a site supervisor, consent of the advisor, and permission of the Chairperson is required.

COMM 5000 3 cr. 3 hr.
Topics in Communications/Media
An exploration of topics of current interest of students and faculty. The content of this course varies from semester to semester. It is designed to allow the teaching of material not normally covered in any other course or to present a new course on a trial basis. The content may be theoretical or drawn from one of the concentrations.

Computer Science

Chairperson: *Aparna Mahadev*

Professor: *Robert McGuire*, *Robert Shaughnessy*

Assoc. Professor: *Gerald Johnson*, *Frits Lander*, *Aparna Mahadev*

Asst. Professors: *Frank Archambeault*, *Charles Wilson*

The Computer Science Program provides for students to develop a unique blend of knowledge and skills in the areas of computer software, computer hardware, and mathematics. The program is designed to prepare students for positions within organizations that design and construct hardware and/or software systems and as such is oriented to software and hardware engineering.

The Major in Computer Science

The Degree of Bachelor of Science in Computer Science must include: CSC 1500, CSC 1550, CSC 1600, CSC 1650, CSC 2500, CSC 2560, CSC 2600, CSC 3100, CSC 3600, CSC 3700,

MATH 2300, MATH 2400, MATH 2600, MATH 3100, PHYS 1300, PHYS 1400 plus an additional 15 s.h. of Computer Science Electives, 3 s.h. of Math electives above MATH 2400.

The Minor in Computer Science

A minor in Computer Science consists of the following courses: CSC 1500 Intro. to Pascal, CSC 1550 Data Structures, CSC 2500 Assembly Language Programming, CSC 3200 Programming Languages and two additional computer science electives (6 semester hours).

Interdisciplinary Graphics Minor, see, Graphics.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

CSC 1000 **3 cr. 3 hr.**
Introduction to Programming
This course provides an opportunity to learn a higher level programming language, to gain experience in the design, coding and utilization of computer programs and to gain insight into operating a computer. Topics include: the syntax and semantics of a higher level programming language, the design, coding, testing and application cycle, application areas, man-machine interrelationships. Several programming assignments are included.
Prerequisite: a working knowledge of high school algebra. (CSC 1000 does not carry credit toward a Computer Science major or a Computer Science minor.)

CSC 1100 **3 cr. 3 hr.**
Computer Application Programming I
This is an introductory course in computer application programming techniques. The course introduces an integrated package of programs, (Spreadsheet, Database, Word Processor), which have direct applications within each student's specific discipline. The course concentrates on the use of each individual application as a stand-alone tool. The student learns how to construct a document, build a database and formulate a spreadsheet using the proper tool for each exercise.
Prerequisite: a working knowledge of high school algebra. (CSC 1100 does not carry credit toward a Computer Science major or a Computer Science minor.)

CSC 1300 **3 cr. 3hr.**
Introduction to Lotus 1-2-3
This course introduces the student to Lotus 1-2-3- for Windows and spreadsheets. Upon completion of this course the student should be proficient in the use of Lotus 1-2-3 and be able to use built in functions for business, family, etc.
Prerequisite: College level math skills is a must in this course. (CSC 1300 does not carry credit toward a Computer Science major or a Computer Science minor.)

CSC 1500 **3 cr. 3 hr.**
Introduction to Pascal
An introduction to Computer Science using a high-level programming language Pascal. Students design programs using a top-down modular approach and code these programs using a structured style. This course provides a solid background for further studies in Computer Science preparing students to enroll in more specialized high-level software courses.

CSC 1550 **3 cr. 3 hr.**
Data Structures
This course presents methods of organizing data and program operations consistent with modern software engineering practices. Data structures studied include: arrays, records, files, sets, and pointer types. Program design and coding practices include: stepwise refinements, separation of problem specifications and implementations, and separately compiled modules.
Prerequisite: CSC 1500.

CSC 1600 **4 cr. 5 hr.**
Introduction to Electronics
An introduction to analog circuits and modern solid state devices. These include: diode rectifiers, power supply design, OP amps, and oscillator circuits. Extensive laboratory work illustrates the operation and behavior of circuits, as well as the use of modern laboratory test equipment. Topics include: basic circuit analysis, semiconductor principles, diodes, power supply design, bipolar and FET transistor applications, OP AMP circuits and applications, oscillators and linear integrated circuits. Weekly laboratory sessions are included.
Offered spring semester.
Prerequisite: MATH 2300 (or concurrent).

CSC 1650 **4 cr. 5 hr.**
Digital Electronics
A study of the design and application of both asynchronous and synchronous electronic logic circuits including: Boolean, Karnaugh and state variable design techniques. Counters, registers, serial and parallel adders, and arithmetic units are included. Topics include: Boolean algebra, algebraic simplifications, Karnaugh mapping, Quine McCluskey method, combinational logic circuits, sequential logic circuits, comparison of TTL, MOS, ECL logic families, the arithmetic unit, coding and decoding, parity detection, and generators and multiplexers. Extensive laboratory work supplements the topics studied.
Offered fall semester.
Prerequisite: CSC 1600.

CSC 2000 **3 cr. 3 hr.**
Computer Graphics for Non-Majors
This course is designed to teach non-computer science majors the fundamentals of graphics programming using Turbo Pascal or Basic on the AT & T computer. The students write programs demonstrating mastery of the following graphics techniques: rotation, scaling, translation, clipping, windowing, graphing, and animation.
Prerequisites: CSC 1000 or CSC 1500 or permission of the Instructor.

CSC 2500 **3 cr. 3 hr.**
Assembly Language Programming
An introduction to the fundamental operations of the computer system at the assembly language level recommended for those who desire an in-depth knowledge of the internal functioning of a modern computer. This course helps advance your programming skills. Topics include: numerical and character representations, loading routines, console operations, mnemonic operations, instruction formats, location counters, addressing modes, parameter passing, subroutine linkage, macros, conditional assembly, device controllers, character-to-integer conversions and simple data structure realizations on the Intel 8086 processor.
Offered fall semester.
Prerequisite: CSC 1550 or permission of the Instructor.

CSC 2560 **3 cr. 3 hr.**
Systems Programming
This course provides the student with the fundamentals of structured programming at the systems level. UNIX™ is used as a base for the course, allowing the student to become familiar with a well-known, flexible, industry-standard operating system. A structured approach is stressed in all assignments, and emphasis is given to both intermediate and low-level programming tasks. The successful student should leave the course with a

thorough knowledge of the C language, be comfortable using the UNIX™ operating system, have a good understanding of intermediate data structures, and an appreciation for a systems approach to low-level programming tasks.
Prerequisite: CSC 2500 or equivalent.

CSC 2600 4 cr. 5 hr.
Computer Organization
An analysis of digital and analog computers in terms of their hardware and the interaction of the hardware and software within the machine. Topics include: machine language programming, memories: RAMS, ROMS, and PROMS, methods of magnetic recording on tape, discs, ASCII coding, a typical minicomputer, bus structure, timing, control and organization of a typical microcomputer, and fundamentals of I/O port (RS 232C) communications. Offered spring semester.
Prerequisites: CSC 1650, CSC 2500.

CSC 2700 3 cr. 3 hr.
COBOL-I
An introduction to the COBOL programming language and top-down program design using the ideas of structured programming. Some of the techniques used to process business data are covered. Students design and code COBOL programs for the solution of problems requiring multiple fixed and/or variable length records for a sequential file. Topics include: identification, environment, data and format design, input data, record and file design, top-down program design, arithmetic and logical operations, sequential disk files, and table
handling.
Prerequisite: CSC 1550.

CSC 2750 3 cr. 3 hr.
COBOL-II
A study of the facility of COBOL for table and file handling with particular attention to indexed sequential files and variable length records. A substantial number of programming projects are included in the course. Topics include sorting and merging files, table handling, variable length records, indexed sequential access methods, file creation and updating and reporting.
Prerequisite: CSC 2700.

CSC 3000 3 cr. 3 hr.
Interactive Computer Graphics I
This is a course in 2-dimensional graphics software engineering in which algorithms for picture generation and manipulation are presented in class and implemented by the student. Topics include: line and circle generation, transformations, clipping and windowing, display files and interactive methods and devices.
Prerequisites: CSC 1550, CSC 2560, MATH 2400.

CSC 3100 3 cr. 3 hr.
Operating Systems
This course examines the internal structure and operation of operating systems with an emphasis towards their design criteria and approaches. Topics include: scheduling, queue management, device drivers, file systems and multiprocessor systems. A working knowledge of at least one higher level systems language and computer data structures are assumed. Offered fall semester.
Prerequisites: CSC 2560, CSC 2600.

CSC 3200 3 cr. 3 hr.
Programming Languages
A study of algorithmic and symbolic programming languages. Languages are selected for study based on their current/predicted importance as well as their features that support fundamental aspects of software engineering.
Prerequisites: CSC 2500, CSC 2560.

***CSC 3300 3 cr. 3 hr.**
Simulation I
The purpose of this course is to introduce the art and techniques of system simulation. A higher-level programming language (FORTRAN and/or PASCAL) and a discrete system simulation language (GPSS) are used in the course. Several programming assignments are included. Topics include: Theory of system simulation, design of system simulation models, and Monte Carlo technique.
Prerequisites: CSC 2560, MATH 2400.

CSC 3400 3 cr. 3 hr.
Data Communications/Networking
This course examines local area network technology and architecture through basic data communications principles, newly developed concepts

and practical hands on experience. All networking fundamentals are presented based on the modular approach of the ISO standards. Network models to be studied include: the local area network (LAN), the high speed local network (HSLN) and the digital switch/digital private branch exchange (PBX). Students gain experience through their projects using modems, AT&T's Information System Network (ISN) and both DOS and UNIX computer systems. Protocol development and complex mesh networks are also studied in the course.
Prerequisites: CSC 2500, CSC 2560, CSC 2600.

CSC 3600 **4 cr. 5 hr.**
Microprocessors
A detailed study of the microprocessor and its applications. Emphasis is placed on a current microprocessor, its hardware and software and its associated family of integrated circuits. Students design a microprocessor system, configuring the random access memory, the read-only memory and peripheral devices using peripheral interface adaptors. Students reinforce theory with extensive laboratory work.
Offered fall semester.
Prerequisite: CSC 2600.

***CSC 3650** **4 cr. 5 hr.**
Microprocessor Applications
In this course the students investigate the techniques by which microprocessors may be linked to the physical signals of the real world. Theory is applied in corresponding laboratory work which includes a complete design project. Topics include: transducers, signal conditioning, analog to digital conversion, digital to analog conversion, Nyquist criteria, signal processing software and data communications techniques.
Prerequisite: CSC 3600.

CSC 3700 **3 cr. 3 hr.**
Algorithms and Data Structures
This course explores data structures and algorithms in the context of problem solving using computers. Data structures are presented as objects of abstract data types on which certain operations can be performed. The data structures covered include: lists, stacks, queues, mappings, priority queues, trees, balanced trees, graphs and dictionaries. Different programming techniques like divide and conquer, dynamic programming and backtracking are presented and important graph algorithms are discussed. Offered spring semester.
Prerequisites: CSC 2560 with MATH 3100 recommended.

***CSC 3800** **3 cr. 3 hr.**
Bit-Slice Microprocessor Design
This course introduces bit slice microprocessor components and the design required to form a flexible high speed computer system. Vertical and horizontal microprogramming techniques are considered. The implementation of a machine level instruction set in microcode is covered. Theory is supported by applied laboratory work using a current bit-slice evaluation system.
Prerequisites: CSC 2500, CSC 2600.

***CSC 3900** **3 cr. 3 hr.**
Numerical Methods for Digital Computation
This course provides the student with a study of basic algorithms used in scientific computer work and affords an opportunity to apply related programming techniques. The emphasis is placed upon building algorithms for the solution of numerical problems, the sensitivity of these algorithms to numerical errors and the efficiency and accuracy of these algorithms on various computers. The student is expected to complete a number of computational projects using suitable procedure-oriented programming languages.
Prerequisites: MATH 2400, CSC 1550.

CSC 4000 **3 cr. 3 hr.**
Interactive Computer Graphics II
This course presents concepts in 3-dimensional graphics software engineering. Topics included are 3-D viewing and projection, transformation, clipping, hidden line and surface removal, curved surfaces, reflection and shading.
Prerequisite: CSC 3000.

CSC 4200 **3 cr. 3 hr.**
Compiler Construction
A study of the techniques involved in the analysis of source language code and the generation of efficient object code. This course focuses more on the front end of the compiler (analyzer)

than it does on the tail end (or generator). Students working in small project teams modify an existing compiler. Several programming assignments are included. Topics include: language definition, lexical, syntactic and semantic analysis and code generation.
Prerequisites: CSC 2500, CSC 2600 with CSC 3200 recommended.

***CSC 4300 3 cr. 3 hr.**
Simulation II
This course continues the topics which were introduced in Simulation I. The course contents include: probability concepts in simulation, queueing theory, introduction to SIMSCRIPT, simulation programming techniques, and analysis of simulation outputs.
Prerequisite: CSC 3300.

***CSC 4400 3 cr. 3 hr.**
Software Design
This course provides the student with an opportunity to obtain practical experience in developing and implementing software systems. Students work in project teams and apply principles of structured design and coding toward the solution of assigned problem(s). The software projects undertaken in this course will vary and interested students should consult with the course instructor prior to enrolling.
Prerequisites: Completion of Computer Science Core courses plus permission of Instructor.

***CSC 4500 3 cr. 3 hr.**
Database Design
This course presents the basic concepts of a database system. The relational system is studied in detail. The topics to be covered include: physical and logical organization of data, query languages and data normalization. The other two approaches, namely, network and hierarchical models, are briefly mentioned. The problem of security and integrity in a database is also studied.
Prerequisite: CSC 3700.

***CSC 4550 3 cr. 3 hr.**
Theory of Computation
This course presents the language-theory and automata concepts that form the core of theoretical computer science. The application of language-theory concepts such as regular expressions and context-free grammars in the design of compilers and text processors is discussed. This course traces the development of the computing theory and includes the state of the art research topics. Topics include: finite automata, push-down automata, turing machines, regular, context-free and unrestricted grammars, halting problem, unsolvability, NP-complete problems, and parallel computers.
Prerequisite: MATH 3100.

***CSC 4650 4 cr. 5 hr.**
Robotics
An investigation of the mechanical, electrical, sensing, and control problems that must be solved to make a robot work in a particular application. Robotic software is developed and a laboratory robot will be used to demonstrate applications. The robot will have sensors to be modified according to data received.
Prerequisite: CSC 2600.

***CSC 4670 3 cr. 3 hr.**
Advanced Assembly Language
An advanced programming course designed to develop a complete and integrated system of hardware interfacing and data analysis in a computer laboratory environment.
Prerequisites: CSC 2500, CSC 2600.

***CSC 4700 3 cr. 3 hr.**
Programming Practicum
This course provides an opportunity for a student, working under the direction of a participating faculty member to study or conduct research in an area not covered in other courses. Typical areas of study include: computer graphics, compilers, operating systems, computer-aided instruction, microprogramming, and data structures. The background required of the student, prior to taking this course, depends entirely on the particular area of study or research.
Prerequisite: Permission of the Instructor is required to enroll in the course.

CSC 4901, 4902, 4903, 4904 1,2,3,4 cr.
Independent Study
Open to students who have permission of the supervising Instructor and the department. Course of study, meetings, and credit by arrangement.

CSC 4940, 4950, 4960 **3, 6, 12 cr.**
Internship

***CSC 5000** **3 cr. 3 hr.**
Topics in Computer Science
The objective of this course is to study a topic of current interest in computer science. This course serves as a vehicle for curriculum experimentation and/or enrichment. After completing this course, the student should have an understanding of some current advance in computer science and/or greater understanding of a particular topic that is of current interest. The background required of the student, prior to taking this course, depends upon the topic, but generally a background equivalent to about five prior computer science courses would be the minimum expected.

Early Childhood, Elementary, Middle School, and Secondary Education

Chairperson:
George Miller

Professors:
Patricia Barbaresi
Rona Flippo
George Miller
Elizabeth Ross
Helen O'Flaherty
William Strader
Lon Vickers

Assoc. Professors:
Ronald Colbert
Judith Ferrara
Robert Greene
Charles Hetzel

Asst. Professors:
Daniel Nomishan
Diane Suskind

Introduction

The majors in Early Childhood, Elementary, Middle School, and Secondary Education also require a major in the Liberal Arts or Sciences in addition to the Education Major. The Education program integrates this grounding in the liberal arts and sciences with a comprehensive foundation in pedagogy that results in highly competent teachers. The department embraces a humanistic philosophy that emphasizes the importance of meeting the developmental needs and interests of all children. Students must have a 2.0 average to transfer into the program. A 2.5 in the major as well as a positive vote of the education faculty is a prerequisite to student teaching.

Early Childhood Education (N-3)

Required Courses

EDUC 1100 — 4 credits
Early Childhood Education Foundations

EDUC 2110 — 4 credits
Behavioral Science in Early Childhood Education

EDUC 2400 — 4 credits
Fine Arts in Early Childhood Education

EDUC 2200 — 4 credits
Language Arts in Early Childhood Education

EDUC 2100 — 4 credits
Reading in Early Childhood Education

EDUC 3100 — 4 credits
Science, Math, and Social Sciences in Early Childhood Education

EDUC 4050 — 4 credits
Senior Seminar in Early Childhood Education

EDUC 4862 — 4 credits
Practicum in Early Childhood Education I

EDUC 4863 — 4 credits
Practicum in Early Childhood Education II

Total 36 credits

External Requirements

Liberal Arts and Sciences Distribution which includes:
PSY1100 General Psychology
Arts or Science Major

Elementary Education (1-6)

Required Courses

EDUC 4010 — 3 credits
Foundations Seminar

EDUC 3000 — 3 credits
Principles and Practices

EDUC 3030 — 3 credits
Reading in Elementary Education

EDUC 3500 — 3 credits
Creative Arts in Elementary

EDUC 3640 — 3 credits
Reading in the Content Areas

EDUC 2750 — 3 credits
Science in Education

EDUC 3020 Teaching Mathematics	3 credits*
EDUC 4100 Language Arts in Elementary	3 credits
EDUC 3600 Social Studies in Elementary	3 credits
EDUC 4882 Practicum in Elementary I	4 credits*
EDUC 4883 Practicum in Elementary II	4 credits*
Total	35 credits

External Requirements

Liberal Arts and Sciences Distribution which includes:
- PSY1100 General Psychology
- PSY2210 Child Psychology
- Arts or Science Major or Interdisciplinary Major

Middle School Education (5 - 9)

Required Courses

EDUC 3040 Foundations in Education	3 credits
EDUC 2750 Science in Education	3 credits
EDUC 3030 Reading in Education	3 credits
EDUC 3640 Reading in the Content Areas	3 credits
MATH 3020 Teaching Mathematics	3 credits
EDUC 3200 Middle School Concept	3 credits
EDUC 3300 Curriculum & Instruction in Middle School	3 credits
EDUC 4100 Language Arts in Education	3 credits
EDUC 3600 Social Studies in Education	3 credits
EDUC 4885 Practicum in Middle School I	4 credits
EDUC 4886 Practicum in Middle School II	4 credits
Total	35 credits

External Requirements

Liberal Arts & Sciences Distribution which includes:
- PSY 1100 General Psychology
- PSY 2210 Child Psychology
- Arts or Sciences or Interdisciplinary Major

The Minor in Elementary Education

The minor in Elementary Education consists of 18 semester hours:

EDUC 3000 Principles and Practices of Elementary Education

EDUC 3040 Foundations of Education

EDUC 3030 Reading in Elementary Education

MATH 2830 Methods and Materials in Elementary Mathematics or BIOL 1750 Science in Elementary Education

Two of the following courses:

EDUC 3500 Creative Arts in Elementary Education

EDUC 4100 Language Arts in Elementary Education

SPED 3350 Issues in Mainstreaming

The minor of 18 s.h. is **NOT** intended to and does not meet Massachusetts certification requirements for elementary school teachers. Before applying for this minor, the student should have successfully completed PSY 2210 Child Psychology.

The Program in Secondary Education (9-12).

The Secondary Education Program prepares students majoring in biology, English, geography, history or mathematics to become secondary school teachers in grades nine through twelve. Graduates are eligible for provisional Massachusetts Certification as a Teacher of Biology (9-12), Earth Science (9-12), English (9-12), Geography (9-12), History (9-12), or Mathematics (9-12), Technology Education (5-12).

The course requirements for the Secondary Education Program are to be found under each of the above majors in this catalog.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

EDUC 1000 **1 cr. 3 hr.**
Personal Reading Improvement
Individualized reading programs are tailored to meet the particular needs of each student. Students experiencing difficulty in understanding what they read engage in programs stressing comprehension skills. Students with good comprehension but with slow reading rates receive assistance in acquiring skills to at least double their speed. Additionally, all students are given instruction in reading at different rates for different purposes. One credit per semester.

EDUC 1010 **1 cr. 2 hr.**
Personal Reading Improvement II
Continuation of Personal Reading Improvement I.

EDUC 1100 **4 cr. 5 hr.**
Early Childhood Foundations
This course gives a brief orientation on the developmental philosophy and goals of early childhood education. Students will consider educational procedures used in facilitating the development of the child, explore the role of the teacher, the environment, and the appropriate instructional strategies used with young children. Required of all Early Childhood majors.

EDUC 2100 **4 cr. 5 hr.**
Reading in Early Childhood Education
The reading process and factors influencing the development of reading will be examined. Prereading and reading skills will be identified and techniques for assessment of skills will be presented. Methods and materials for teaching primary reading will be discussed and illustrated. A practicum in the reading area is required.
Prerequisite: EDUC 2110.

EDUC 2110 **4 cr. 5 hr.**
Behavioral Science in Early Childhood I: Child Development and Observation
This course includes a study of principles, patterns, and theories of human development and learning as well as principles and techniques of naturalistic and standardized child study. Observation, recording, synthesis, and interpretation of the behavior of young children will occur within a practicum setting. Case studies will be written. Required of Early Childhood majors.
Prerequisite: General Psychology or Introduction to Psychology. Required for EDUC 3110.

EDUC 2200 **4 cr. 5 hr.**
Language Arts in Early Childhood Education
This course covers an examination of the four components of verbal communication: listening, speaking, reading, writing; current materials and programs for developing language; use of literature in language and concept development; practicum for application of learning.

EDUC 2400 **4 cr. 5 hr.**
Fine Arts in Early Childhood Education
This course studies the integration of art, music, and movement for young children using an interdisciplinary approach. Investigation of the objectives, methods and materials in the fine arts is conducted.

EDUC 2500 **4 cr. 5 hr.**
Pre-Kindergarten Clinical
This course is designed for the student of Early Childhood Education who is interested in exploring early childhood prior to the Kindergarten and public school experience. The students will be investigating a variety of models and curriculum programs that are designed for infants, toddlers, and preschool aged children. The student in this course will be investigating a wide variety of pre-Kindergarten settings and exploring the systems designed to create, administer and evaluate such programs.

EDUC 2700 **4 cr. 5 hr.**
Parent-Child Relations in Education
This course explores the role of the parent in the development of the child and how the parent relates to the educational system. This course will stress awareness of how parents stimulate the growth of behavioral trends in their children, as well as their usefulness as resources to improve the educational environment of the child.
Prerequisite: EDUC 2110 or Child Development.

EDUC 2750 **3cr. 3 hr.**
Science in Education
Contemporary elementary and middle school science methods and materials, courses of study and science texts are examined. Science teaching units are developed and demonstrated.

***EDUC 2800** **15 cr. 45 hr.**
Integrated Creative Arts Teacher Education Program
This is a full-semester experience which includes five weeks of classroom instruction and training (creative work in visual arts, language arts, movement, music, and intergrating art forms). Subsequent to the initial period, students will be placed in field stations for classroom experiences for the remainder of the semester. These activities will involve assisting teacher-specialists in one or more of the art form areas, and the development and implementation of programs for the specific classroom and its pupils so as to foster the pupils personal expression through creation in the arts. A weekly seminar on Wednesday afternoons from 1 pm to 3 pm will be held at the College for the purposes of workshop experiences and problem solving. Students are expected to be present in the school throughout the semester. They will be visited and evaluated regularly by College faculty as well as by cooperating teacher-specialists in the schools.

EDUC 3000 **3 cr. 3 hr.**
Principles and Practices of Elementary Education
This course includes an examination of the theoretical and practical knowledge of the teaching/learning process. Students demonstrate competencies in the areas of planning, curriculum design, and evaluation. Focus is placed on the needs and learning styles of the elementary school child and the instructional strategies used to effectively meet those needs. In addition, classroom management skills and techniques are emphasized. A field experience is an integral part of the course.
Prerequisite: PSY 2210.

EDUC 3010 **3 cr. 3 hr.**
Successful Practices in Secondary Education
This course provides an opportunity to experience many teacher roles at the secondary school level. The student serves as a tutor in a public school, develops curriculum and instructional material, and designs, presents, and critiques a micro-lesson.

EDUC 3020 **3 cr. 3 hr.**
Teaching Mathematics
Contemporary elementary and middle school mathematics standards, methods, and materials are examined. Developmentally appropriate lessons and learning devices are developed and demonstrated.

EDUC 3030 **3 cr. 3 hr.**
Reading in Education
This course includes an examination of the reading process, methods of evaluation, and strategies for reading. Reading skills and procedures for developing these skills are examined and current approaches to the teaching of reading are evaluated. The student will be made cognizant of methods of grouping and evaluation procedures. A practicum is required.
Prerequisites: PSY 2210, EDUC 3000.

EDUC 4010 **3 cr. 3 hr.**
Foundations Seminar
This course covers a study of the professional aspects of teaching, the school's role in society, the organization and support of American education, the historical foundations of education and its philosophical bases. Issues affecting curriculum development and the future of American education are considered.

EDUC 3050 **3 cr. 3 hr.**
Reading Diagnosis and Remediation
This course provides students with the competencies necessary to diagnose reading abilities and to develop reading proficiency in their own future

class rooms, and the skills of administering, scoring, and analyzing Informal Reading Inventories. The student will test a child, plan a program of instruction for that child, and instruct the child based on the diagnosis and instructional plan. Emphasis is also placed on the development and utilization of assessment strategies, instructional techniques, and instructional activities specific to the needs and interests of the child.
Prerequisites: EDUC 2100 and EDUC 3030.

***EDUC 3060 3 cr. 3 hr.**
Methods and Materials in Early Childhood Education
This course includes a hands-on workshop and exploration of all areas of the curriculum. In doing so students will research and prepare games and devices appropriate to an early childhood classroom. Elective for all education majors.

EDUC 3100 4 cr. 5 hr.
Science, Math, and Social Studies in Early Childhood Education
Emphasis is placed on the development and demonstration of instructional techniques and materials in science, math, and social studies that are appropriate for heterogeneous groups of young children.

EDUC 3110 4 cr. 5 hr.
Behavioral Science in Early Childhood II: Learning and Assessment
This is a continuation of EDUC 2110. (EDUC 2110 and EDUC 3110 cannot be taken simultaneously.)

***EDUC 3200**
Middle School Concept
This course introduces students to the historical development, philosophy, and the competencies needed in the Middle School.
Prerequisite: Child Psychology.

***EDUC 3300**
Curriculum and Instruction in the Middle School
This course introduces students to curriculum development, instructional competencies and appropriate goals and objectives in the Middle School.
Prerequisites: Child Psychology and Middle School Concept.

***EDUC 3400**
Reading in the Middle School
This course imparts appropriate knowledge and competencies in reading at the Middle School level.
Prerequisites: Child Psychology and Middle School Concept.

EDUC 3500 3 cr. 3 hr.
Creative Arts in Elementary Education
Students will experience the analogous elements of the arts in a series of workshops. Students will then devise lessons which they will present in class for evaluation and use in a practicum.

EDUC 3600 3 cr. 3 hr.
Social Studies in Education
This course equips the future teacher with the knowledge, teaching strategies and sequential course development necessary to teach this critical area in elementary school and middle school.
Prerequisite: EDUC 3000.

***EDUC 3640 3 cr. 3 hr.**
Reading in the Content Areas
This course includes investigation of the reading process, discussion of current evaluative methods, analysis of reading strategies, and procedures for development.

EDUC 3700 3 cr. 3 hr.
Using Computers in Classrooms
Students will examine the philosophy, theory, and application of the use of computers in classrooms. A significant portion of class time will be devoted to "hands on" experiences with Macintosh computers. These experiences will include programming in text and graphics mode, an introduction to the nature and use of LOGO, the use of printers and color plotters, the development of programs designed to enhance the learning abilities of children, and the evaluation of educational software. No prior computer experience is assumed.

EDUC 4000 **3 cr. 3 hr.**
Analysis of Reading Problems
The course will examine the correlates of reading problems, identify principles of diagnosis, and analyze, administer, and interpret formal diagnostic tests. Students will demonstrate competency in preparing a case study report.
Prerequisite: EDUC 2100 or EDUC 3030.

EDUC 4050 **4 cr. 5 hr.**
Senior Seminar in Early Childhood
This course covers an examination of the historical perspectives and philosophical orientations in the field of early childhood education. Specific attention is given to an analysis of current issues and programs.
Practicum experiences will be required. Required of Early Childhood majors.

EDUC 4100 **3 cr. 3 hr.**
Language Arts in Education
This course provides students with an introduction to the nature of language and language growth. Emphasis is placed on the meaning and importance of language arts as well as focusing on the characteristics of elementary school age children that affect and are affected by the language arts program. Stress is placed on elements of writing, speaking, listening, spelling, and handwriting. A field experience is an integral part of the course.
Prerequisite: EDUC 3000.

***EDUC 4780** **3 cr. 3 hr.**
Introduction to Learning Disabilities
This course includes a study of some of the causes of school learning disabilities at the Elementary level. Specific techniques and remediation exercises will be discussed.

EDUC 4850 **3 cr. 3 hr.**
Special Methods for Teaching in the Modern Secondary School
Methods and philosophical background for teaching in the modern secondary and/or middle schools of today, includes a survey of current school curricula in the various disciplines, planning communication skills, management strategies, providing for special needs, review of relevant literature and/or research, development of teaching skills, techniques of teaching in the special subject field of the student, and an overview of school law as it pertains to teachers and students. This course, or the specific course if sufficient numbers, is a prerequisite for student teaching and should be taken the semester prior to student teaching. Students will meet for three hours per week with the instructor and in addition there will be a field experience requirement in keeping with current Massachusetts certification regulations. The field experience component will provide the student with the opportunity to meet with the respective clinical professor for their discipline by arrangement for a minimum of six weeks for at least one hour per week.

EDUC 4862, 4863 **4cr.**
Student Teaching in Early Childhood Education
Student Teaching Practicum in Early Childhood. Students are assigned to cooperating schools for a semester of student teaching.

EDUC 4882, 4883 **4 cr.**
Student Teaching Practicum in Elementary
Students are assigned to cooperating schools for a semester of student teaching.

EDUC4885, 4886 **4 cr.**
Student Teaching in Middle School Education

EDUC 4903 **3 cr.**
Independent Study in Education
This course provides students in early childhood, elementary, and secondary education with the opportunity to do research with staff guidance in a problem in education. It is limited to juniors and seniors.
Prerequisite: permission of Department.

EDUC 5000 **3 cr. 3 hr.**
Topics in Education
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Economics

Chairperson: *Edmund Thomas*

Associate Professor: *Michael Turk*

Professors: *Caroline Murphy*, *Nancy Wiegersma*

Asst. Professors: *John McKeon*, *Pirudas Lwamugira*

The Major in Economics

The degree of Bachelor of Science in Economics requires Principles of Macroeconomics and Microeconomics (ECON 1000, 1200), Intermediate Macroeconomics and Intermediate Microeconomics (ECON 3650, 3660), Money and Banking (ECON 2400), History of Economic Thought (ECON 3000), Calculus for Business (MATH 2200), Business Statistics (MATH 1800), and at least 12 credit hours of electives in Economics, including GEOG 3000 and BSAD 4230.

The Minor in Economics

A minor in Economics consists of ECON 1000 and ECON 1200 in addition to four courses selected from ECON 1300, 2200, 2400, 2450, 2500, 2550, 2600, 3000, 3550, 3650, 3660, 3700, 3750, 3900, 3930, GEOG 3000. and BSAD 4230.

Course Offerings

*Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

ECON 1000 **3 cr. 3 hr.**
Principles of Economics: Macroeconomics
This course is a study of the theory of employment, income, and growth. Stabilization policy and current problems in American capitalism are emphasized.
Prerequisite: Satisfactory completion of the College Mathematical Readiness requirement.

ECON 1200 **3 cr. 3 hr.**
Principles of Economics: Microeconomics
Students examine the theory of the consumer and the business firm. Efficiency in the allocation of resources is examined in four different market structures: pure competition, pure monopoly, monopolistic competition, and oligopoly.
Prerequisite: ECON 1000.

ECON 1250 **3 cr. 3 hr.**
Introduction to the U.S. Economy
This course is an introduction to economics course for *non-majors*. It surveys the field of economics without the technical sophistication of a principles course, which must prepare students for higher level theory. The focus of this course is on the real problems of competition and growth in the U.S. economy.

***ECON 1300** **3 cr. 3 hr.**
Consumer Economics
This course emphasizes theories of consumption and economic functioning, demand, consumer problems, standards of living, policies for protecting consumers, and expanding consumption.

ECON 2200 **3 cr. 3 hr.**
Comparative Economic Systems
This course studies the different economic systems operational in the world today. Emphasis is on differences between the various types of market capitalist and social democratic systems.
Prerequisite: ECON 1000.

ECON 2300 **3 cr. 3 hr.**
Industrial Organization
This course integrates theory, empirical studies, and case studies to analyze the effects of government regulations on the structure and organization of US business firms. Several cases of antitrust legislation are studied, and the course shows how political and economic issues affect industrial organization.
Prerequisites: ECON 1000 and ECON 1200.

ECON 2400 **3 cr. 3 hr.**
Money and Banking
This course focuses on the role of money, credit, and banking in the American economy. Special emphasis is placed on the applicability of monetary policy to the problems of economic stability.
Prerequisite: ECON 1000.

ECON 2450 **3 cr. 3 hr.**
Human Resource Economics
Labor market and employment analysis are the focus of this course which covers the structure of labor markets, the education and training of the labor force, and manpower programs. The serious problems of unemployment, underemployment, discrimination, and barriers to job entry are also discussed.
Prerequisites: ECON 1000 and ECON 1200 or ECON 1250.

ECON 2500 **3 cr. 3 hr.**
Economic Development
This course examines the problems of less developed countries; topics of discussion include population, income growth, capital formation, unemployment, foreign investment and aid, the role of government, and international economics.
Prerequisite: ECON 1000.

ECON 2550 **3 cr. 3 hr.**
Urban Economics
This course is a historical and economic explanation of the growth of cities as well as a theoretical analysis of their location, form, and economic structure. Current urban problems are also discussed.
Prerequisites: ECON 1000, ECON 1200 or ECON 1250.

ECON 2600 **3 cr. 3 hr.**
Public Finance
This course studies the principle of governmental expenditures and revenues. Attention is also devoted to the problems of public debt, fiscal policy, and inter-governmental fiscal relations, with particular reference to the United States.
Prerequisites: ECON 1000 and ECON 1200.

ECON 3000 **3 cr. 3 hr.**
History of Economic Thought
This course covers the work of the great economists within the framework of understanding the relationship between history and economic thought. From the roots of economic thought in the works of the mercantilists and physiocrats, the course turns to the giants in political economy: Adam Smith, David Ricardo, Karl Marx, Alfred Marshall, J. M. Keynes.
Prerequisites: ECON 1000 and ECON 1200.

ECON 3550 **3 cr. 3 hr.**
International Economics
This course explores the theories of international trade and finance, and their links to theories of economic development and growth. Major current topics in the international economy, including economic competition among countries, debt problems in the Third World, and North-South relations, are treated as practical issues against which the theories can be tested.
Prerequisites: ECON 1000, ECON 1200.

ECON 3650 **3 cr. 3 hr.**
Intermediate Macroeconomics
As a second course and more advanced treatment of macroeconomics, this course provides a detailed examination of major topics in macroeconomics, including theories of consumption, investment, and growth recession, and efforts by the government to stabilize the economy through fiscal, monetary, or other measures. This course introduces the Keynesian, neo-classical, and Marxian models of the macroeconomy.
Prerequisites: ECON 1000, ECON 1200.

ECON 3660 **3 cr. 3 hr.**
Intermediate Microeconomics
This course analyzes consumer and producer equilibrium in a market economy. The behavior of firms in the four market structures and the behavior of firms and individuals in input markets are examined. Applications of economic theory to concrete economic problems are emphasized.
Prerequisites: ECON 1000, ECON 1200, MATH 2200.

ECON 3700 **3 cr. 3 hr.**
Econometrics
This course is an introduction to econometric methods, statistical inferences, and testing hypotheses. Model building techniques and their theoretical justifications are presented and evaluated in terms of their performance.
Prerequisites: ECON 1000, ECON 1200, MATH 2200, MATH 2800 or permission of Instructor.

ECON 3750 **3 cr. 3 hr.**
Managerial Economics
Applied microeconomics or the application of economic theory and methodology to the practice of managerial decision making is the focus of this course. Case studies are emphasized.
Prerequisites: ECON 1000, ECON 1200, MATH 2200, MATH 2800 or permission of Instructor.

ECON 4900 **3 cr. 3 hr.**
Independent Study in Economics
Open to students who have the permission of the supervising Instructor and the department. Course of study, meetings, and credit by arrangement.

ECON 4940 **12 cr. 3 hr.**
Internship in Economics
Work experiences in private or public firms. Students acquire skills useful to professional economists.
Prerequisites: Junior or Senior standing, 3.00 Econ. cum, permission of internship coordinator.

ECON 5000 **3 cr. 3 hr.**
Topics in Economics
Courses having more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

English

Chairperson:
Irene Harris

Professors:
William Barker
Judith Budz
Irene Harris
William Keough
Marilyn McCaffrey
Erwin Pally
Robert Welch
Nancy Yee

Assoc. Professors:
Roberta Adams
Janice Alberghene
Colin Bourn
Arnold Gordenstein
John McGrail
Thomas Murray
Robert Tapply

Asst. Professors:
George Case
Chola Chisunka
Joseph Finkel
Nancy Kelly

Introduction

The English Department serves all Fitchburg State College students through freshman writing and speech classes and through Liberal Arts and Sciences electives. An English major offers students a well-rounded liberal education. Specialization in writing or in secondary education also prepares students professionally.

The Major in English Literature

The Bachelor of Arts in English (Literature) requires English Literature I, II, and III (ENGL 2200, 2210, 2220),
Shakespeare (ENGL 4020 or 4030), American Literature I or II (ENGL 2000 or 2100), and five literature electives, at least two of them at the 4000 level. Second year proficiency in a foreign language is required.

The Bachelor of Arts in English (Professional Writing) requires 36 hours in English including English Literature I, II, and III (ENGL 2000, 2210, 2220), Shakespeare (ENGL 4020 or 4030), American Literature I or II (ENGL 2000 or 2100); two 4000 level literature electives; Advanced Expository Writing (ENGL 3890), and nine hours from the following courses: Journalism (ENGL 2800), Journalism Practicum I (ENGL 3810), Creative Writing (ENGL 3800), Writing for Business and Technology (ENGL 3860), Feature and Magazine Writing (ENGL 3870). Also recommended are 6, 9, or 12 hours of internship. Internship requires Department approval.

Provisional Certification for Teaching English

Students interested in teaching English on the secondary level need to complete the provisional certification program. The requirements are:

Major: English

ENGL 2910 Literature for Young Adults	3 cr.
ENGL 2950 Survey of English Grammar	3 cr.
ENGL 4600 The Structure and Nature of Language	3 cr.
A Course in World Literature	3 cr.
	12 cr.

Core Courses

ENGL 2860 Introduction to Secondary School Teaching	3 cr.
ENGL 4700 Teaching Writing in Secondary Schools	3 cr.
ENGL 4850 Special Methods in English	3 cr.
ENGL 4860 English Practicum in a Secondary School (150 hrs.)	6 cr.
	15 cr.

External Requirements for all Secondary Education Students

Liberal Arts and Sciences Distribution which includes:
PSY2230 Adolescent Psychology

Internship

The English Department, through its internship program, offers an opportunity for seniors and second-semester juniors to explore a profession for one full semester of work and credit. English majors can experience a wide range of professional activity in fields such as radio, television, journalism, personnel work, library functions (school, public, or technical), public relations, law, government, human services, and technical productions.

New internship positions are identified each semester. The program has provided an unusually high level of job-entry success for those participating. The internship enables students to apply theoretical knowledge and laboratory-developed skills in an actual professional setting. Department approval is required.

The Minor

The Minor in English has two tracks, each requiring 18 hours in English courses.

TRACK A, Concentration in Literature, requires 6 hours from: English Literature I, II, III (ENGL 2200, 2210, 2220), American Literature I, II (ENGL 2000, 2100); 9 hours in literature electives; 3 additional hours in English.

TRACK B, Concentration in Professional Writing, requires 6 hours from: English Literature I, II, III (ENGL 2200, 2210, 2220), American Literature I, II (ENGL 2000, 2100); Advanced Expository Writing (ENGL 3890); 6 semester hours in advanced writing courses selected from: Journalism (ENGL 2800), Journalism Practicum I (ENGL 3810), Creative Writing (ENGL 3800), Writing for Business and Technology (ENGL 3860), and Feature and Magazine Writing (ENGL 3870); 3 additional hours in English.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

ENGL 0100 3 institutional cr. 3 hr.
Basic College Writing
Study of the process of writing as well as sentence arrangements and punctuation patterns in Edited American English.

ENGL 1000 1 cr. 3 hr.
Writing Skills Workshop
An intensive study of the basic writing skills. Cannot be taken simultaneously with Basic College Writing (ENGL 0100), English Writing I or II (ENGL 1100, 1200). May be taken 3 times for 1 credit per semester.

ENGL 1100 3 cr. 3 hr.
Writing I
A course in writing as process and product. Practice, both oral and written, in expressing ideas with precision, clarity, and economy. The research essay. Critical reading.

ENGL 1200 3 cr. 3 hr.
Writing II
A continuation of ENGL 1100 with an emphasis upon writing as a thinking and learning process. Careful reading, critical and creative thinking, and writing using analysis and synthesis, with nine papers on a range of subjects. Course options incorporate various styles and formats related to different situations and audiences. *Prerequisite: A passing grade in ENGL 1100. Prerequisite for all English electives: Writing I and II (ENGL 1100, 1200).*

ENGL 2000 3 cr. 3 hr.
American Literature I
Representative texts from the age of exploration through the American Civil War.

ENGL 2100 **3 cr. 3 hr.**
American Literature II
Representative texts and their contexts since the Civil War.

ENGL 2200 **3 cr. 3 hr.**
English Literature I
British writers from the Old English period through the 16th Century.

ENGL 2210 **3 cr. 3 hr.**
English Literature II
British writers of the 17th and 18th Century.

ENGL 2220 **3 cr. 3 hr.**
English Literature III
British writers of the Romantic, Victorian, and modern periods.

***ENGL 2300** **3 cr. 3 hr.**
Literature and Disability
Images of disability as presented in fiction, biography, and autobiography.

ENGL 2320 **3 cr. 3 hr.**
Script Writing
A basic course in script writing for film, television, and multi-image productions including preparation of proposals, treatments, storyboards, and scripts. Script formats will include documentary, educational, corporate, and dramatic film/video writing. (See also COMM 2320.)

ENGL 2400 **3 cr. 3 hr.**
World Literature I
Western literary masterpieces through the middle of the 17th century. C

ENGL 2500 **3 cr. 3 hr.**
World Literature II
Literary masterpieces from the mid-17th century to the present.

ENGL 2600 **3 cr. 3 hr.**
The Bible as Literature
The style, narrative techniques, symbols, and historical setting of the Old and New Testament writers. C

ENGL 2620 **3 cr. 3 hr.**
Classical Mythology
Pre-Homeric stirrings of symbol and story; Virgil and Ovid and Roman traditions thereafter. C

ENGL 2650 **3 cr. 3 hr.**
Other Voices
Works by significant ethnic writers James Farrell, Maxine Hong Kingston, Abram Tertz, Zora Neale Hurston. Workshop approach. C

ENGL 2700 **3 cr. 3 hr.**
The Short Story
Significant stories by some of the world's great writers, showing the evolution of the short story form.

ENGL 2800 **3 cr. 3 hr.**
Journalism
Studies of the press. Individualized writing assignments. Emphasis on ethics in news treatment of contemporary issues, structuring the news story.

***ENGL 2810** **3 cr. 3 hr.**
Copy Editing
The mechanics of editing, issues of attribution, use of sources, balanced coverage and libel laws; relationship between editor and writer.

ENGL 2860
Introduction to Secondary School Teaching
This course is required of all students entering a provisional certification program at the secondary level. It is a sophomore level course for full-time undergraduates and the first course taken by transfer and certification-only students. Students will become familiar with the complexities of secondary school teaching and its demands. The course will give faculty the opportunity to screen students and give students the opportunity to test their commitment to teaching. This course includes a pre-practicum requirement and is a prerequisite for other certification course requirements.

ENGL 2900 **3 cr. 3 hr.**
Children's Literature
An introductory survey of both classic and contemporary children's literature. Texts studied from a variety of perspectives and in the contexts of both childhood and society.

ENGL 2910 **3 cr. 3 hr.**
Literature for Young Adults
Wide reading of recent literature written specifically for the teenager including problem novels, historical novels, science fiction, fantasy, plays, and poetry.

ENGL 2950 **1 cr. 1 hr.**
Survey of English Grammar
Traditional and transformational systems of English grammar as a basis for understanding conventions of English usage.

ENGL 3000 **3 cr. 3 hr.**
World Drama
Significant and representative plays from the beginning to the modern period.

ENGL 3020 **3 cr. 3 hr.**
Modern Drama
The works of such playwrights as Ibsen, Chekhov, Sartre, Brecht, Ionesco, Beckett, and Pinter.

ENGL 3100 **3 cr. 3 hr.**
The World Novel to 1914
Significant novels representing various countries and periods as well as stages in the development of this literary form.

ENGL 3110 **3 cr. 3 hr.**
The World Novel Since 1914
Modern novels are studied both aesthetically and as human documents. C

ENGL 3300 **3 cr. 3 hr.**
Women and Literature
Literature by and about women, addressing their roles in society, at work, and in relationships.

ENGL 3470 **3 cr. 3 hr.**
Technical Documentation
An opportunity to study and write the basic forms of technical documentation found in business and industry, including end-user manuals and training guides. Examination of graphics, typography, and desktop publishing will be considered as they apply to hardcopy production. (See also COMM 3470.)

ENGL 3800 **3 cr. 3 hr.**
Creative Writing
Opportunity for students to write fiction and poetry. Junior standing or approval of the Instructor is required.

ENGL 3810 and 3820 **3 cr. 3 hr.**
Journalism Practicum: I and II
Open to members of the Strobe staff and other students engaged in appropriate on-campus or off-campus journalistic activities. (P1 and P2 may be taken separately for a total of 6 credits).
Prerequisite: Journalism.

***ENGL 3840** **3 cr. 3 hr.**
The American Magazine
Close study of significant American magazines: the editorial policies and requirements, audience slant, advertisements, visual layouts.

***ENGL 3850** **3 cr. 3 hr.**
Writing for the Natural and Social Sciences
A writing workshop for individuals needing to do writing in the physical and life sciences, human services, psychology, sociology, and social sciences.

ENGL 3860 **3 cr. 3 hr.**
Writing for Business and Technology
Writing for students interested in business, industry, and management. Includes business correspondence, descriptions of processes and mechanisms, sets of instructions, proposals, abstracts, reports, etc. (Credit will not be given for both ENGL 3860 and COMM 3860.)

ENGL 3870 **3 cr. 3 hr.**
Feature and Magazine Writing
Writing feature articles for newspapers, magazines, and trade journals. (Credit will not be given for both ENGL 3870 and COMM 3870.)

ENGL 3890 **3 cr. 3 hr.**
Advanced Expository Writing
Focused on nonfiction writing genres, the course investigates the social, linguistic, and rhetorical conventions underlying the creation of traditional forms. Includes classical and modern rhetorical theory and related grammatical, linguistic, and philosophical questions.

ENGL 4000 **3 cr. 3 hr.**
The Middle Ages
Literature of the British Isles and Europe to 1500.

ENGL 4010 **3 cr. 3 hr.**
Chaucer and His World
Emphasis on the Canterbury Tales in their medieval context.

ENGL 4020 **3 cr. 3 hr.**
Shakespeare's Drama
Several history plays as well as one comedy and one tragedy. Emphasis on Shakespeare's interpretation of political life and leadership.

ENGL 4030 **3 cr. 3 hr.**
Shakespeare's Thought
Emphasis on the conception of human destiny in Shakespeare's comedies and tragedies. The plays will be examined for their psychological, philosophical, and religious meanings.

***ENGL 4040** **3 cr. 3 hr.**
Major English Writers of the 17th Century
The drama of Jonson, Webster, Middleton, Congreve; the poetry of Milton, Jonson, Donne, Herbert, Herrick, Marvell and Dryden; the prose of Browne and Dryden.

ENGL 4050 **3 cr. 3 hr.**
The Novel in the 18th Century
The origins of the novel in England and its development as a reflection of the tastes of a rising middle class. Readings include Defoe, Richardson, Fielding, Johnson, Austen and others.

ENGL 4060 **3 cr. 3 hr.**
The Age of Satire: 1700-1750
Emphasis on the importance to the age of standards in life, as well as in literature, the public responsibilities of the writer, and the various ways that humor is used as a weapon for social purposes.

ENGL 4070 **3 cr. 3 hr.**
From Classic to Romantic: 1750-1800
Changing values in philosophy, the nature of man and politics, as well as the reflection of these changes in the art, music, and literature of the late 18th Century.

ENGL 4080 **3 cr. 3 hr.**
Romanticism
The pursuit of individual vision in the works of British writers in the Romantic period, with reference to the movement in other countries and in other forms of art.

ENGL 4090 **3 cr. 3 hr.**
The 19th Century English Novel
Significant novels demonstrating the changing cultural milieu and varying approaches of the genre during this period.

ENGL 4100 **3 cr. 3 hr.**
Victorian Literature
Man's relationship to a changing society in the face of nineteenth-century industrialization and scientific progress studied in the major writers of the period.

ENGL 4110 **3 cr. 3 hr.**
***The Last Victorians**
The Wilde 90's, Edwardian exuberance, and World War I collated with modern trends in poetry, prose, and drama.

ENGL 4120 **3 cr. 3 hr.**
20th Century Irish Fiction
From James Joyce through Brian Moore, including O'Faolain, O'Connor, O'Flaherty, McGahem. C

ENGL 4130 **3 cr. 3 hr.**
20th Century Irish Drama and Poetry
Poets, from Yeats through Montague, Kinsella, Heaney; playwrights, from Synge and O'Casey through Beckett and Friel.

ENGL 4140 **3 cr. 3 hr.**
Modern Poetry
Chief modern poets of America and England; precursors in the tradition; close reading in the lyric form, esp. Eliot through Lowell and Plath.

ENGL 4150 **3 cr. 3 hr.**
Mark Twain and American Humor
Southwestern humor leading up to the writings and career of Mark Twain, and also humorists who share the Twain legacy.

***ENGL 4200** **3 cr. 3 hr.**
The Romantic Movement in U.S. Literature 1810-1860
Concepts of nature, idealism, and community in the works of Hawthorne, Poe, and others.

ENGL 4210 **3 cr. 3 hr.**
Major American Writers of the 20th Century
The varied creativity of American writers of fiction, drama, poetry, criticism, and the essay since World War I.

***ENGL 4220** **3 cr. 3 hr.**
American Novel to 1950
Close examination of several representative works by major American novelists of this period.

ENGL 4230 **3 cr. 3 hr.**
American Novel Since World War II
A close analysis of seven or eight major novels.

ENGL 4240 **3 cr. 3 hr.**
Rags to Riches in a Hostile World
The Horatio Alger hero in American literature.

ENGL 4250 **3 cr. 3 hr.**
The Gatsby Myth
The celebrations and pitfalls of success in multi-cultured American literature.

***ENGL 4260** **3 cr. 3 hr.**
Journalist to Novelist
The stylistic and professional development of distinguished American writers who began their careers as reporters.

***ENGL 4500** **3 cr. 3 hr.**
Literary Criticism
Theories about literature and their practical application in the classroom and in one's own reading. Approaches to different forms of literature as well as a survey of changing historical perspectives.

ENGL 4600 **3 cr. 3 hr.**
The Structure and the Nature of Language
Language systems and grammatical theories, including the history of the English language, theories of language acquisition, and psycholinguistic and sociolinguistic topics.

ENGL 4700 **3 cr. 3 hr.**
Teaching Writing in Secondary Schools
Practice and research in alternatives for teaching writing in secondary schools. Different approaches explored through experiments for the teacher and opportunities to test these approaches in prepracticum experiences.

ENGL 4850 **3 cr. 3 hr.**
Special Methods in English
The methodology of English, including lesson planning, selection of materials, curriculum development, review of relevant research.

ENGL 4860 **6 cr.**
English Practicum in a Secondary School
Student teaching practicum. Students are assigned to cooperating schools for a semester of student teaching.

ENGL 4903 **3 cr.**
Independent Study
For English majors excelling in scholarship upon approval of both department chair and advising instructor. Course of study, meetings, and credit by arrangement.

ENGL 4920 **3 cr. 3 hr.**
Seminar
An opportunity for literary analysis and research, topic to be selected by the instructor. Primarily for English majors, with others admitted by permission.

ENGL 4940, 4950, 4960 **3, 6, 9 cr.**
Internship

ENGL 4970 **12 cr.**
Internship
An opportunity to gain valuable on-the-job experience for college credit by spending one semester (full-time) in business or industry. Students are placed in a field of their choice where they can use their abilities as communicators, learn new skills, and sample a potential job market. An internship is a recommended component of the English Department Writing Track. Department approval and junior/senior standing required.

ENGL 5000 **3 cr. 3 hr.**
Topics
This course serves as a vehicle for curriculum experimentation and enrichment. Topics will be selected by the instructor, usually from work in progress.

French

Chairperson: *Harry Semerjian*
Assist. Professor: *G. Tod Slone*

Professor: *Jeanne Moore*

The Minor in French

The minor in French will require a minimum of 15 semester hours. Students must take Intermediate French I and II or be able to demonstrate proficiency at that level. Elementary French will not count toward the minor. After demonstrating intermediate level competency, the student may take a combination of courses in French literature, composition, or culture which will yield the requisite 15 hours of credit. For those students starting French above the intermediate level, FREN 4903 Advanced French Independent Study, may be repeated for credit.

Course Offerings

Asterisk indicated that the course may be offered less then once every to years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

FREN 1000 **3 cr. 3 hr.**
French for Beginners I
Correct pronunciation, reading ability and fundamentals of grammar and syntax. French gradually becomes the working classroom language. For students with no language experience or less than two years high school level. Students with two or more years not admitted without permission of Instructor . C

FREN 1100 **3 cr. 3 hr.**
French for Beginners II
A continuation of FREN 1000. C

FREN 2000 **3 cr. 3 hr.**
Intermediate French I
Conversation practice; readings stressing life, customs, and culture of France.
Prerequisite: two years of high school, French II and/or Instructor 's permission. C

FREN 2100 **3 cr. 3 hr.**
Intermediate French II
A continuation of FREN 2000. C

***FREN 2400** **3 cr. 3 hr.**
Methods for Teaching French in the Elementary School
Techniques and materials for use in elementary school. Required for foreign language specialization. Minimum of 12 semester hours of French or its equivalent and Instructor's permission is required.

FREN 2600 **3 cr. 3 hr.**
French Civilization
The history, geography, fine arts and literature of the French people from the earliest times through today. Extensive readings in French. C, IDIS
Prerequisite: FREN 2100 or Instructor's permission.

FREN 2700 **3 cr. 3 hr.**
French Literature I

***FREN 2800** **3 cr. 3 hr.**
French Literature II
A continuation of French Literature I including literature of the 19th and 20th centuries.

FREN 3500 **3 cr. 3 hr.**
French Conversation and Composition
For students desiring greater fluency in speech and writing. Recommended for civilization and literature courses.
Prerequisite: FREN 2100 or Instructor's permission.

FREN 4901 **1 cr. 1 hr.**
Independent Study

FREN 4903 **3 cr. 3 hr.**
Advanced French Independent Study
Prerequisite: Minimum of 12 semester hours, 2.0 grade-average in French, and permission of Instructor, Department Chairman.

FREN 5000 **3 cr. 3 hr.**
Topics
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

General Studies

Contact Person:Feng Chou
Coordinator of General Studies Program.

The Bachelor of Arts in General Studies and Bachelor of Science in General Studies programs provide for individually designed, multi- or interdisciplinary majors which allow students, with faculty guidance and approval, to tailor programs of study to their own needs and interests. Among other objectives of these programs are the following:

- to enable students to explore multidisciplinary areas and to integrate them in a coherent and meaningful way;
- to provide the opportunity for broadly-based liberal arts or sciences majors;
- to provide the opportunity for majors which combine liberal arts

and sciences courses with professional courses; and

- to provide the opportunity, particularly for older students, for a part-time, individually-paced education which allows students to build their academic confidence and integrate their studies more easily into their lives.

The Major in General Studies

Requirements for the Major

1. A rationale and a thematic organizing principle for each program.
2. A minimum of 36 semester hours of course work, exclusive of the senior year, "capstone" course.
3. A minimum of 3 areas of study (defined by disciplines, not department or tracks).
4. A minimum of 9 semester hours in each of the above 3 areas of study.
5. A minimum of 6 semester hours of upper-division work in each of the above 3 areas of study (exclusive of the "capstone" course).
6. A maximum of 9 semester hours of general education course work which can be counted toward the major (one course per general education area or Liberal Arts and Sciences cluster, if applicable).
7. A senior-year "capstone" course intended to help students to integrate the various areas of focus. Either an independent study or a full internship (3-15 semester hours).
8. 30 semester hours of course work completed after the program of study is approved and filed with the registrar.
9. Approval of the student's program by a faculty body to be designated.
10. The degree will be a Bachelor of Science unless the student includes foreign language study through the second year of college level work and concentrates his/her studies primarily in those disciplines which give the BA degree.

Administration of major

Students wishing to declare a major in General Studies will make preliminary application on a form provided by the Offices of the Academic Affairs or Graduate and Continuing Education. Students must have completed at least four semesters of college level work or the equivalent before they will be eligible for formal admission into the program. However, students interested in the major should discuss it with the General Studies Coordinator as early as possible. The preliminary application will set forth the student's academic and professional goals and why they are achievable most appropriately by the General Studies Program. The form will require students to outline their proposed program and stipulate any required independent exercise or internship. All college-level courses and grades must be listed on the form. The form, together with a preliminary plan of study, should be received in the Office of the General Studies Coordinator no later than October 15th for entrance into the program in the following spring semester and February 15th for entrance in the following summer or fall semester.

After receiving the form and accompanying preliminary plan of study, the General Studies Coordinator will select the student's General Studies Committee members and arrange for the student to meet with them. Committee members then will discuss the proposal with the student. If the program is approved by the Committee, they then will help the student formulate the final proposed plan of study. They will also decide which of them will serve as the student's General Studies Advisor. The Advisor will file a copy of the student's program with the College Registrar. Any subsequent changes in the student's program must be approved by the student's General Studies Committee.

**Bachelor of Science in General Studies (Humanities)*

The Humanities Department has created a General Studies major which applies especially to students pursuing a degree in Elementary, Early Childhood, or Middle School Education since new requirements for certification specify a double major. Students interested in such a major should contact one of the designated faculty of the Humanities Department who will assist the student in the choice and the design of the major from the disciplines listed below.* The advisor will then inform the Registrar. The advisor to students in the Elementary, Early Childhood and Middle School Education Department, as is the case with students choosing other majors, will meet with the student for advising purposes after the student has consulted with the Humanities Department. The Humanities Department will maintain the advising records, issue a progress report, and will inform the registrar.

Recommended Humanities Program—Elementary, Early Childhood and Middle School Education Majors
Levels I and II: Choose 9 semester hours from three disciplines. One should not have more than 9 semester hours of courses with an asterisk (*).

A. Art

*ART 1000 or ART 1200 Survey of Art Forms I or II
*ART 1400 Drawing
ART 1500 Life Drawing
ART 1600 Design
ART 1800 American Art
ART 1820 Contemporary Art
ART 1900 Renaissance Painting or any other upper level art courses

B. Music

*MUSC 1000 Art of Music
MUSC 2000 Commonwealth of the Arts
*MUSC 2200 Basic Music Theory
MUSC 3100 Symphony
MUSC 3200 Opera
MUSC 3400 Twentieth Century Music
MUSC 3500 American Music
MUSC 4500 Harmony or any other upper level music courses

C. History

*HIST 1000 or HIST 1100 or HIST 1150 World Civilizations I or II or III
HIST 1400 & 1500 U.S. History I & II
HIST 2000 Medieval Europe
HIST 2100 Twentieth Century Europe
HIST 2200 British History
HIST 2300 Black America
HIST 2490 Women in U.S. History to 1870 or any other uppper level history courses.

D. Philosophy

*PHIL 1000 Introduction to Western Philosophy
PHIL 1100 Logic
PHIL 2000 Philosophy of Education
PHIL 2440 American Philosophy
PHIL 2600 Philosophy of Man
PHIL 3310 Ancient Philosophy
PHIL 4100 Philosophy of Art or any other upper level philosophy courses

Total of 27 semester hours minimum
Level III: A capstone course, project, or internship for 3 - 15 semester hours.

E1. French

FREN 2000 & 2100 Intermediate French	6 s.h.
FREN 2600 French Civilization	3 s.h.
FREN 2700 French Literature	3 s.h.
FREN 3500 French Conversation & Composition	3 s.h.
FREN 5000 Topics in French	3 s.h.
LITERATURES* Cf. below	9 s.h.
Electives/Capstone	9 s.h.

E2. German

GER 2000 & 2100	6 s.h.
GER 2600 German Civilization	3 s.h.
GER 2800 Modern German Literature	3 s.h.
GER 3500 German Conversation & Composition	3 s.h.
GER 5000 Topics in German	3 s.h.
LITERATURES* Cf. below	9 s.h.
Electives/Capstone	9 s.h.

E3. Russian

RUSS 2000 & 2100 Intermediate	6 s.h.
RUSS 2400 Dostoevsky & Tolstoy	3 s.h.
RUSS 2500 Russian Literature	3 s.h.
RUSS 2600 Russian Culture & Soviet Life	3 s.h.
RUSS 5000 Topics in Russian	3 s.h.
LITERATURES* Cf. below	9 s.h.
Electives/Capstone	9 s.h.

E4. Spanish

SPAN 2000 & 2100 Intermediate Spanish	6 s.h.
SPAN 2600 Hispanic Culture	3 s.h.
SPAN 2700 Hispanic Literature	
SPAN 3500 Spanish Conversation & Composition	3 s.h.
SPAN 5000 Topics in Spanish	3 s.h.
LITERATURES* Cf. below	9 s.h.
Electives/Capstone	9 s.h.

**Literatures*

World Literature I & II	
American Literature I & II	
Women and Literature	9 s.h.

Requirements for the degree	**Semester Hours**
General Education or Liberal Arts and Sciences Program	60 (may go up to 63, depending upon whether science courses taken are 3 or 4 semester hours)
Major in General Studies	36
Capstone Course, Project, or Internship in Major	3 (may go up to 15 if student does a major independent project or internship)
General Electives	21 (may be fewer depending upon credits taken in above two categories.)
	Total: 120 Semester Hours

Geo/Physical Sciences

Chairperson: *Robert Champlin*

Asst. Professor: *Lawrence Guth*

Professors:
James P. Barbato
Robert F. Champlin
Robert J. Gardula

The Major in Geography/Earth Science

The degrees of Bachelor of Science and Bachelor of Arts in Geography or Earth Science each require a minimum of 36 semester hours of course work, including a core consisting of Introduction to Geography (GEOG 1000), Geology (GEOG 2100), Map Use and Interpretation (GEOG 2800), and Meteorology (GEOG 4000).

Geography majors also are required to take Economic Geography (GEOG 3000), Population Geography (GEOG 3400), Cartography (GEOG 4800), and a course in regional geography. Additional courses will be chosen in consultation with your academic advisor.

In addition to the core courses, Earth Science majors are required to take Historical Geology (GEOG 3250), Geomorphology (GEOG 4200), Oceanography (GEOG 4300), Remote Sensing of the Environment (GEOG 4500), Environmental Geology (GEOG 4600), Astronomy (PHYS 1030), Ecology (BIOL 2300), and a geography elective chosen in consultation with your advisor.

Required cognate courses for Earth Science majors (to be taken as part of Liberal Arts and Sciences distribution and free electives): 8 s.h. Chemistry, 4 s.h. Physics, 6 s.h. Mathematics, 3 s.h. Computer Science.
*Those students interested in graduate school should give strong consideration to summer field camp.

Provisional Certification for Teaching

Students interested in teaching Earth Science on the middle school/ secondary level will need to complete the provisional certification track. The requirements are as follows:
Major: Earth Science Concentration

Core Courses

GEOG 2860 Introduction to Secondary School Teaching	3 cr.
ENGL 4700 Teaching Writing in Secondary Schools	3 cr.

GEOG 4850 3 cr.
Special Methods in Earth Science

GEOG 4880 6 cr.
Earth Science Practicum in a Secondary School (150 hrs.)

15 cr.

External Requirements for all Secondary Education students:
Liberal Arts and Sciences Distribution which includes:
PSY 2230 Adolescent Psychology

The Minor in Geography/ Earth Science

The Minor in Geography consists of GEOG 1000, Introduction to Geography, and five additional geography courses chosen in consultation with one of the geography/earth science faculty.

Course Offerings

*Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

GEOG 1000 3 cr. 3 hr.
Introduction to Geography
The interrelationships between the physical and cultural elements of man's environment.

GEOG 1100 3 cr. 3 hr.
Principles of Human Geography
An introduction to the elements and processes underlying economic, social, and political geographic patterns, with applications to actual case studies and situations.

GEOG 1300 3 cr. 4 hr.
Earth, Sea and Air
Selected topics from the earth sciences. A laboratory science.

GEOG 2100 3 cr. 4 hr.
Geology
An introductory survey of the basic elements of physical and historical geology. Laboratory required. Open to all students. GEOG 1000 strongly suggested.

GEOG 2800 3 cr. 3 hr.
Map Use and Interpretation
This course considers the nature and role of maps in communicating aspects of the earth's natural and human environments. Involved are: a) Map Reading: relating map symbols to realworld features, b) Map Analysis: extracting information from maps, and c) Map Interpretation: seeking explanations for environmental patterns depicted in a maps system of symbolization.

GEOG 2860
Introduction to Secondary School Teaching
This course is required of all students entering a provisional certification program at the secondary level. It is a sophomore level course for full-time undergraduates and the first course taken by transfer and certification only students. Students will become familiar with the complexities of secondary school teaching and its demands. The course will give faculty the opportunity to screen students and give students the opportunity to test their commitment to teaching. This course includes a pre-practicum requirement and is a prerequisite for other certification course requirements.

***GEOG 3000 3 cr. 3 hr.**
Economic Geography
Analysis of factors underlying the spatial distribution of primary, secondary, and tertiary economic activities, with emphasis on locational processes in commercial economics. C, IDIS

***GEOG 3100 3 cr. 3 hr.**
Political Geography
Dependent and independent political units, boundary disputes, strategic areas, buffer zones, and the function of international organizations.

***GEOG 3200 3 cr. 3 hr.**
U.S. and Canada
U.S. and Foreign Area Studies. Regional and systematic analysis based upon geographic elements influencing domestic evolution and international relations.
Prerequisite: GEOG 1000.

GEOG 3250 3 cr. 4 hr.
Introduction to Historical Geology
This course studies the physical history of the earth based on evidence from the rock and fossil record from the early Paleozoic Era through the present. The evolution of life forms,

subjective and absolute dating methods, fossil identification and fossil evidence supporting plate tectonic theory are some of the topics studied. Laboratory required.
Prerequisite: GEOG 2100 or permission of Instructor.

GEOG 3270 3 cr. 4 hr.
Common Rocks and Minerals
Major rock and mineral types will be studied. Considerable time will be spent on field and laboratory identification techniques. Mineral crystal systems and rock and mineral forming processes will also be studied.
Prerequisite: GEOG 2100.

GEOG 3400 3 cr. 3 hr.
Population Geography
Deals with selected demographic processes and population characteristics relative to resources in economically underdeveloped countries and regions. Involves both a systematic and regional view of world population problems.

GEOG 4000 3 cr. 4 hr.
Atmospheres I-Meteorology
Fundamental principles of weather systems. Emphasis will be on mid-latitude phenomena and weather forecasting. Topics in tropical meteorology and severe storm phenomena will be discussed. Laboratory required.

***GEOG 4100 3 cr. 4 hr.**
Atmospheres II-Climatology
Regional differentiation of the climatic zones of the major land and ocean areas of the world. Special attention will be given to urban climatology and the energy, and moisture climatology of the earth.
Prerequisite: GEOG 4000 Meteorology or permission of the Instructor.

***GEOG 4110 3 cr. 3 hr.**
Atmospheres III-Planetary Atmospheres
This course seeks to explain the similarities and differences between the earth's atmosphere and the atmospheres of the planets and moons in our solar system. Each atmosphere will be studied to determine its chemical composition, thermal structure, energy budget, pressure, wind systems, clouds, precipitation and other pertinent meteorological phenomena.
Prerequisite: GEOG 4000.

GEOG 4200 3 cr. 4 hr.
Geomorphology
A comprehensive study of land forms and their origins.
Prerequisite: GEOG 2100 Geology or permission of the Instructor.

GEOG 4300 3 cr. 4 hr.
Oceanography
A study of the physical and chemical properties of sea water, atmosphere interaction with the sea surface, currents and volume flow, the energy budget of the oceans, the submarine geology of the ocean basins including a thorough discussion of ocean floor spreading, and coastal processes.

***GEOG 4400 3 cr. 3 hr.**
Urban Geography
Analysis of the external relationships and internal structure of cities, with emphasis on the spatial attributes of contemporary urban qualities and problems in America. Classroom activities are supplemented by applied studies in the greater Fitchburg-Leominster area.

GEOG 4500 3 cr. 4 hr.
Remote Sensing of the Environment
Techniques in the use of maps, satellite and aerial imagery as applied to landscape analysis and resource management.
Prerequisite: GEOG 2100.

GEOG 4600 3 cr. 4 hr.
Environmental Hydrogeology
Basic principles of geology will be applied to environmental problems caused by flooding, groundwater contamination, pollution due to human activity and landslides. These are a few of the topics considered. A case studies approach is used.
Prerequisite: GEOG 2100 or GEOG 4200.

***GEOG 4700 3 cr. 3 hr.**
Geographic Perspectives on Conservation
An analysis of natural resources problems arising from changes in technology, population pressure, and concern with the quality of environment.
Prerequisite: GEOG 1000.

GEOG 4800 3 cr. 3 hr.
Cartography
Treats the principal aspects of cartography as a communication

process. Considers the nature and purpose of mappable information, elements of map design, and methods involved in map construction.

***GEOG 4820 3 cr. 3 hr.**
Advanced Cartography
Emphasis on concepts and techniques involved in a variety of mapping problems. Assigned projects will incorporate various methods of data presentation and compilation, as well as map design and symbolization.

GEOG 4850 3 cr. 3 hr.
Special Methods in Teaching Earth Science
Lesson planning, selection of materials, curriculum development, and review of relevant research.
Prerequisites: ENGL 4700 and EDUC 3010.

GEOG 4880 6 cr.
Earth Science Practicum in a Secondary School Student
Teaching Practicum in earth science. Students are assigned to cooperating schools for a semester of student teaching.

GEOG 4900 1, 2, 3 cr.
Independent Study in Geography
Provides exceptional students the opportunity of research with faculty guidance in a subject or problems of geographic significance.
Prerequisites: 12 hrs. of Geography and permission of Instructor. Hours and credit by arrangement.

GEOG 4940, 4950, 4960 3, 6, 12 cr.
Internship in Geography
Work experiences in private and governmental concerns. Assignments depend on the needs of the participating agency and interests and vocational objectives of the student.
Prerequisites: Junior or Senior standing and permission of Internship coordinator.

GEOG 5000 3 cr. 3 hr.
Topics in Geography
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

German

Chairperson: *Harry Semerjian*

Professors: *John Burke*, *Jeanne Moore*

The Minor in German

The minor in German will require a minimum of 15 semester hours. Students must take Intermediate German I and II or be able to demonstrate proficiency at that level. Elementary German will not count toward the minor. After demonstrating intermediate level competency, the student may take a combination of courses in German literature, composition, or culture which will yield the requisite 15 hours of credit. For those students starting German above the intermediate level, GER 4903 Independent Study, may be repeated for credit.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

GER 1000 3 cr. 3 hr.
German for Beginners I
Correct pronunciation, reading ability, and fundamentals of grammar and syntax. German gradually becomes the working classroom language. Use of German language films, cassettes, and utilization of Apfeldeutsch, a computer course for German. Students with two or more years not admitted without permission of the Instructor. C

GER 1100 3 cr. 3 hr.
German for Beginners II
A continuation of GER 1000. C

GER 2000 3 cr. 3 hr.
Intermediate German I
Conversation and laboratory practice; readings stress the life, customs, and culture of Germany.
Prerequisites: Two years of high school German or GER 1000 and GER 1100. C

GER 2100 3 cr. 3 hr.
Intermediate German II
Continuation of GER 2000. C

***GER 2600** **3 cr. 3 hr.**
German Civilization
The history, geography, fine arts and literature of the German people from earliest times to the present. Extensive readings in German.
Prerequisite: GER 2100 or permission of the Instructor.

***GER 2700** **3 cr. 3 hr.**
German Literature
Representative works of German literature from the Niebelungenlied to the Tin Drum. Conducted in German.
Prerequisites: GER 2100 and/or Instructor's permission.

***GER 2800** **3 cr. 3 hr.**
Modern German Literature in Translation
An introduction to the varied creativity of German writers of fiction, drama, and poetry of the 20th century. The German film contribution of the 1920's with feature-length films will be included. Readings will be in translation and the course will be conducted in English.

***GER 2900** **3 cr. 3 hr.**
Modern German Culture: "The Road to Hitler"
Given in English. An examination of the cultural factors in music, art, literature, and film which illuminate the events leading to National Socialism. Readings will focus on translated materials especially in literature which help to explain why the Germans embraced Adolph Hitler. Includes a significant audio-visual component.

***GER 3500** **3 cr. 3 hr.**
German Conversation and Composition
This course is designed to increase the student's ability to write and speak German. Students will be expected to write compositions on topics developed orally in class.
Prerequisite: GER 2100 or permission of the Instructor.

GER 4901 **1 cr. 1 hr.**
Independent Study in German

GER 4903 **3 cr. 3 hr.**
Independent Study in German
Open to students in the language with the permission of the supervising Instructor and the Department Chairman. Meeting times and credit by arrangement.

GER 5000 **3 cr. 3 hr.**
Topics in German
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught in an experimental basis under this title.

Graphics

Graphics is an interdisciplinary subject area with applications in Computer Science, Communications/ Media, and Industrial Technology. Additional information on Graphics can be attained from the departments of Computer Science, Communications/Media, and Industrial Technology.

The Minor in Graphics

The Interdisciplinary Graphics Minor develops an appreciation for all three areas while concentrating in one of the areas. Students gain a theoretical background in Computer Science, a design/applications background in Communications/Media and a production background in Industrial Technology.

Required Courses

CSC 1000 Introduction to Programming or
CSC 1500 Introduction to PASCAL
COMM 3810 Graphic Design I
ITEC 1500 Graphic Arts Processes or
COMM 3910 Graphic Arts Production
CSC/COMM/ITEC Interdisciplinary Graphics Seminar

A concentration (2 courses) in one of the following areas: Note: Students must select a concentration in a department outside their major field of study.

Concentration in Computer Science

CSC 1550 Data Structures
CSC 2000 Computer Graphics for Non-majors

Concentration in Communications/Media

COMM 3890 Electronic Graphic Design COMM 3820 Graphic Design II

Concentration in Industrial Technology

ITEC 2410 Automated Drafting Systems
ITEC 2500 Offset Lithography or
ITEC 3530 Typography I

Course Offerings

Interdisciplinary Graphics Seminar
Through lectures, presentations by speakers, and projects, students will study advanced topics in graphics. The topics will be chosen to emphasize state-of-the-art technologies in graphics. The course will be administered by faculty from the Graphics Center and the material will vary from semester to semester to meet the needs and interests of the participants.

History

Chairperson: *Edmund Thomas*

Asst. Professors: *Ralph Coffman, John Paul*

Professors: *Benjamin Lieberman, Pasquale Micciche, Susan Williams, Edmund Thomas*

Instructor: *Sibyl Brownlee*

Assoc. Professor: *Harriet Alonso*

The Major in History

The Bachelor of Science and Bachelor of Arts in History must include: HIST 1000, 1100, 1150, 1400, 1500, 4000; one elective from European History; one elective from U.S. History; one elective from Third World (Asia, Africa, or Latin America); and an additional 9 semester hours of History electives. The Bachelor of Arts requires foreign language proficiency at the second year level. All B.A. and B.S. candidates must have a concentration in a subject area outside of history. This concentration will be constructed with the approval of the student's departmental advisor. Fifteen semester hours are required for a concentration. Recognized minors in other disciplines may be substituted for the concentration.

Provisional Certification for Teaching History

Students interested in teaching History on the secondary level will need to complete the provisional certification track. The requirements are as follows:

Major: History

Core Courses:

HIST 2860 Introduction to Secondary School Teaching	3 cr.
ENGL4700 Teaching Writing in Secondary Schools	3 cr.
HIST 4850 Special Methods in History	3 cr.
HIST 4890 *History Practicum in a Secondary School (150 hrs.)	6 cr.
	15 cr.

External Requirements for all Secondary Education Students:

Liberal Arts and Sciences Distribution which includes:
PSY2230 Adolescent Psychology

The Minor in History

The minor in History consists of 18 semester hours with at least three courses at the 2000 level or above.

Course Offerings

Asterisk indicates that course may be offered less than once every two years. "C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

HIST 1000 **3 cr. 3 hr.**
World Civilizations I
World Civilizations I covers from the beginnings of humanity to 1350. It investigates ancient empires and the development of the great world religions. The interdependence of Eurasia is stressed while the independent existence of the Amerindian and African empires is also explored. C

HIST 1100 **3 cr. 3 hr.**
World Civilizations II
World Civilizations II investigates the period 1350-1815. The rise of Europe, the resurgence of Islam, the alteration of the Americas, and the continued independent existence of Asiatic and African empires are studied. Additional stress is placed on worldwide interdependence. C

HIST 1150 **3 cr. 3 hr.**
World Civilizations III
This course studies the major wars, social, economic, and political changes in the world from 1815 to the present. Nationalism, global interdependence, and the effects of technology upon peoples are major themes. C

HIST 1400 **3 cr. 3 hr.**
United States History I
A survey of United States History beginning with colonial times and continuing through the era of Reconstruction following the Civil War.

HIST 1500 **3 cr. 3 hr.**
United States History II
A Survey of the United States from 1877 to the present. All courses at or above 2000 require Writing II as a prerequisite.

HIST 2000 **3 cr. 3 hr.**
Medieval Europe
Major characteristics and institutions of medieval civilization. Within a chronological framework of political events, attention is given to topics in art, literature, philosophy, and religion.

HIST 2050 **3 cr 3 hr.**
Early Christianity and Judaism
Survey of major cultures of Mid East that shaped history of Judaism and Christianity in period 300-500 A.D. Focus on lifeways of different groups using archaeological and literary records.

HIST 2100 **3 cr. 3 hr.**
Twentieth-Century Europe
From the first World War to the present. Cultural, scientific, and social developments as well as domestic and international politics.

***HIST 2200** **3 cr. 3 hr.**
British History to 1688
The development of English government and culture from the earliest times to the Glorious Revolution of 1688.

HIST 2250
British History Since 1688
The industrial and agricultural revolutions; the evolution of the British Empire and Commonwealth. The position of Britain in the world today.

HIST 2300 **3 cr. 3 hr.**
Black America
An investigation of the historical development of the black man in the United States from his West African origins to the present. Emphasis will be placed on the role the black played in the economic, political and social life of the United States.

HIST 2370 **3cr. 3hr.**
Eastern Amerindian History
Study of major cultures of Amerindians of Eastern North America and Caribbean from prehistoric times through contacts with European colonizers. Uses archaeological, anthropological, literary, and historical records. C

HIST 2380 **3 cr. 3 hr.**
Western Amerindian History
Study of major cultures of Amerindians West of Mississippi River and Meso America from prehistoric times through contacts with European colonizers. Uses archaeological, anthropological, literary, and historical records. C

HIST 2400 **3 cr. 3 hr.**
Massachusetts History
The Bay State from Plymouth Rock to the Kennedy clan. Political, social & economic trends.

HIST 2490 **3 cr. 3 hr.**
Women in U.S. History to 1870
A multicultural examination of women of all roles and classes in the pre-colonial era through 1870. The "lady and the mill-girl" polarity in the antebellum era, the emergence of the women's rights movement and women in Victorian culture are also covered. C

HIST 2500 **3 cr. 3 hr.**
Women in U.S. History: 1870 to the Present
Women in America, the struggle against discrimination and for the ballot, the history of various women's groups, including working class, black, and immigrant women. Not merely the study of exceptional women but women as housewives, breadwinners, and citizens. C

HIST 2600 **3 cr. 3 hr.**
The U.S. Military Experience I
A survey of military history from the Ancient Greeks to the 1870's. The emphasis is on the changing military strategy, tactics, and weapons during their long time span, and the role of the infantry, cavalry, and artillery as they developed to implement the above.

HIST 2650 **3 cr. 3 hr.**
The U.S. Military Experience II
A survey of United States history from the Spanish-American War to the present. Integrates various elements of national security policy (military, political, diplomatic, economic, etc.) to provide an understanding of the problems of national security from a broad perspective.

HIST 2700 **3 cr. 3 hr.**
History of Mexico, Central America and the Caribbean
Both HIST 2700 and 2750 survey pre-Columbian and colonial backgrounds, the clash and fusion of cultures, and the evolution of today's Latin American civilizations as they relate to specific geographical areas. C, IDIS

HIST 2750 **3 cr. 3 hr.**
History of South America
See HIST 2700. C, IDIS

HIST 2800 **3 cr. 3 hr.**
Far East I
The development of Chinese, Japanese, Korean, and South East Asian Civilization from the earliest time until the middle 19th century period. Political, military, and economic background will be covered, but special emphasis will be placed on cultural history. C

HIST 2850 **3 hr. 3 cr.**
Far East Since 1800
Covers the development of Chinese, Japanese, Korean and South East Asian Civilizations from 19th century to the present. C

HIST 2860
Introduction to Secondary School Teaching
This course is required of all students entering a provisional certification program at the secondary level. It is a sophomore level course for full-time undergraduates and the first course taken by transfer and certification-only students. Students will become familiar with the complexities of secondary school teaching and its demands. The course will give faculty the opportunity to screen students and give students the opportunity to test their commitment to teaching. This course includes a pre-practicum requirement and is a prerequisite for other certification course requirements.

HIST 2900 **3cr. 3 hr.**
Middle East History to 1500
Ancient Middle East, rise of Islam, Umayyad and Abbasaid dynasties, Crusades. Covers cultural, religious, military, and women's history. C

HIST 2920 **3cr. 3hr.**
Middle East History Since 1500
Rise and fall of the Ottoman Empire. Modern nation states of Middle East. Covers political, cultural, religious, and military history of region. C

HIST 3000 **3 cr. 3 hr.**
Tudor England, 1485-1603
Political, social and religious developments from Henry VII to Elizabeth I. The Reformation, the rise of Puritanism, foreign affairs, and constitutional developments.

HIST 3050 **3 cr. 3 hr.**
Stuart England, 1603-1689
Political, social, religious, and constitutional developments from James I to William and Mary. Opposition to the early Stuarts, the civil war, the restoration and revolutionary settlements. Events of Irish and Scottish, as well as English history.

HIST 3100 **3 cr. 3 hr.**
Irish History, 1798-1850
The Rebellion of 1798 and the Act of Union, O'Connell and Catholic emancipation, the rise of Irish nationalism, the great famine of 1845-50.

***HIST 3150** **3 cr. 3 hr.**
Irish History, 1850 to the Present
The Home Rule movement, Parnell and the land league, the Celtic revival, the rebellion of 1916 and the civil war; the Republic of Ireland and Ulster in the twentieth century.

HIST 3300 **3 cr. 3 hr.**
Modern Russia to 1905
An Intermediate level survey of the major cultural and political forces which have shaped the modern Russian state. The course traces the development of Russia from its origins in 10th century Kiev, through the mongol period, and culminates with an overview of Russian political, cultural, and intellectual history up to the 1905 revolution. C

HIST 3350 **3 cr. 3 hr.**
Modern Russia Since 1905
An intermediate level survey of 20th century Russian history from 1906 to the revolutionary developments of the Gorbachev era. Emphasis is placed upon the events and forces which led to the Russian Revolution in 1917, the establishment of the Soviet Government, the role and character of the Communist party, the Khruschev, and concludes with current events. C

HIST 3400 **3 cr. 3 hr.**
The Age of Revolutions
Major political, social, and cultural developments in France, England, and the United States during the age of the American, French, and Industrial Revolutions, 1763-1848. The meaning and applicability of the term "revolution" will be examined, and there will be a series of case studies of topics such as art and politics, romanticism, and the religious revival in England.

***HIST 3450** **3 cr. 3 hr.**
Women in European History Since 1700
This is an advanced course in European Women's History beginning in 1700 with the changes leading to the French Revolution and continuing to today with the new revolutionary changes in Eastern Europe. The effects of historical events and policies on the lives of French, British, Irish, German, Spanish, Italian, and Russian Women will be examined.
Prerequisite: World Civilizations II or III or an intermediate European history elective.

HIST 3500 **3 cr. 3 hr.**
American Colonial History
Exploration, settlement patterns, imperial system, social structure, rise of representative government in America, and the 18th-century wars for empires.

HIST 3550 **3 cr. 3 hr.**
The American Revolution
The coming of the Revolution, war tactics and strategy, problems of the Confederation period, and the American Constitution.

HIST 3600 **3 cr. 3 hr.**
The American Civil War and Reconstruction 1830-1877
Politics, slavery, and Abolitionism; political, military, and diplomatic aspects of the war; failure of reconstruction.

HIST 3650 **3 cr. 3 hr.**
U.S. Society and Culture, 1880-1920
Major movements of the late nineteenth and early twentieth centuries in United States History including rise of middle class culture, Populism, urbanization, trade unionism, consumerism, and Progressivism.

HIST 3700 **3 cr. 3 hr.**
U.S. Society and Culture, 1920-1945
Topics in American politics, economics, and society from 1920-1945, with special emphasis on reform movements, the great Depression, and World War II.

HIST 3750 **3 cr. 3 hr.**
Topics in Cold War America
Recent American History from 1945 to 1990. Topics include the Cold War, the Arms Race, Joseph McCarthy, the 1960's, Vietnam, Water-gate, Society, the economy, and post-war presidents. Emphasis on Cold War foreign policy as it has affected the United States.

***HIST 3800** **3 cr. 3 hr.**
American Labor, 1840-1960
A study of the patterns, personalities and social tensions involved in the responses of American Labor to the changing economic construction, from the pre-industrial society through the industrial to the post-industrial.
Prerequisites: HIST 1400, 1500.

HIST 3850 **3 cr. 3 hr.**
The U.S. In World Affairs: 1898 to the Present
The age of imperialism, World War I, the era of "isolation," origins of World War II, American involvement and wartime diplomacy, breakdown of East-West relations, the Cold War, the Korean and Vietnam conflicts.

***HIST 3900** **3 cr. 3 hr.**
The Frontier in American History
The Frontier studied as a historical, social, economic, and psychological process to determine its impact on American development.

***HIST 3950** **3 cr. 3 hr.**
Contemporary Latin America
Latin America since World War II. A study of economic, cultural, and political trends, agrarian reform and economic development.

HIST 4000 **3 cr. 3 hr.**
Historiography
An introduction to the historical method with stress on bibliographical aids, historical fallacies, and the theories of history as they have developed. Primarily for history majors.

***HIST 4100** **3 cr. 3 hr.**
United States Industrial History I
The industrialization and urbanization of the United States from colonial times to 1870.

***HIST 4150** **3 cr. 3 hr.**
United States Industrial History II
A continuation of HIST 4100.

HIST 4500 **3 cr. hr.**
Senior Seminar
Guided readings and research on a specified topic. Designed to enrich research and analytical skills of future teachers and those desiring to enter graduate or other professional schools.

HIST 4850 **3 cr. 3 hr.**
Special Methods in Teaching of History
Special techniques for the teaching of history and their relationship to the principles of general methods.

HIST 4860 **6 cr.**
History Practicum in a Secondary School
Student teaching practicum. Students are assigned to cooperating schools for a semester of student teaching.

HIST 4900
Independent Study in History
Open to students majoring or specializing in history with the permission of the supervising Instructor and the department. Meeting times and credit by arrangement.

HIST 5000 **3 cr. 3 hr.**
Topics in History
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

The Honors Program

Coordinator: *Janice Alberghene*

The Honors Program provides an enriched, stimulating set of courses for the best prepared and most qualified entering students as well as for top ranking Fitchburg students. Its objectives are:

1. To provide an integrated set of General Education courses at the freshman level which provides a rigorous and stimulating program to entering honors students. These courses are selected from courses commonly taken in many different major programs. The English composition courses are modified in accordance with the plan of integration.
2. To offer more advanced courses in order to provide students with a high level of proficiency in research and writing skills. To provide students with exposure (through the 1 s.h. Honors Seminar) to a wide variety of faculty research projects and areas of faculty expertise and interest.
3. To provide a set of extracurricular experiences which are culturally enriching and support the course work of the program.

Program Description

The Honors Program consists of 52-54 semester hours of credit. The program is a combination of special sections of required Liberal Arts and Science courses, two seminar courses, one each on an interdisciplinary topic and on a multi-cultural theme, a one credit honors colloquium, which may be repeated for credit, a senior honors project, and a variable number of honors elective courses. Satisfactory completion of the Honors Program discharges the student's obligation under the Liberal Arts and Sciences requirement. Each of the courses in the program meets all the require-

ments for Liberal Arts and Sciences and is intended to provide a rigorous introduction to them. Students who leave the Honors Program before completing it become subject to the requirements of the Liberal Arts and Sciences curriculum.

The Freshman Program is entitled **Modern Man: A Historical Perspective** and forms an integrated program. During the first semester students study the 19th Century—its movements, concepts and trends. The specific studies include Honors English I, Romantic Music, and World Civilization II. During the spring semester, students study the 20th century with courses in Literary Modernism (Honors English II) and Contemporary Art. Honors elective courses may be substituted for these but the 19th and 20th century theme must be followed. The Freshman Foundation Year Program in Honors will conform to the requirement of having an over-arching theme.

Beyond the historical focus of the entry level honors subjects, courses in the category of honors elective courses will demonstrate the methods of inquiry which are utilized by a particular discipline and explore political, scientific and artistic dilemmas in the modern world. Assigned readings in courses at this level will involve significant research in primary sources.

All Honors students will take two seminar courses. One such seminar course will have an interdisciplinary topic. The other will have a multicultural theme. It is expected that in these courses, students will show considerable ability to do independent work on projects and papers. They should do the majority of their readings in primary sources and demonstrate excellence in research and writing skills.

Each student will be assigned an Honors Advisor who will assist the student in selecting courses to fulfill the honors requirements.

Senior Honors Thesis

The culmination of the Honors Program is the research and writing of an in dependent Honors Thesis. Each senior honors candidate will select a faculty mentor for the thesis and together with the mentor will choose the thesis topic which must be approved by a Review Committee consisting of the mentor and two other members of the faculty. After successful oral presentation of the Honors Thesis to the Honors Committee, the student is recommended for the distinction of Honors at graduation.

All students in the Honors Program are also members of the Honors Club. The club is active in campus life and sponsors speakers and performers for the campus as well as trips to cultural sites and performances.

Freshman students are invited to join the Honors Program based on their high school grades and preparation, SAT scores, and references from secondary school teachers. A limited number of sophomore students may be invited to join the program if they have a cumulative average of 3.2 or better (See Dr. Janice Alberghene in the English Department in Miller Hall for more information).

Human Services

Chairperson:
Mary Ann Hanley

Asst. Professors:
John M. Hancock
John Solin

Coordinator:
David C. Maloney

Professors:
Mary King
David C. Maloney
Richard J. Spencer
Cynthia Tower

The Major in Human Services

The Human Service major at Fitchburg State College is an interdisciplinary major, administered by the Department of Behavioral Sciences in cooperation with various other college departments and areas. This interdisciplinary approach allows students to develop the broad background and skills necessary for working with

people. The Human Service Major will obtain a B.S. degree, preparing him/her for work in a variety of settings in the helping professions at entry level positions, and for graduate study.

Aims and Objectives

The Human Services Program is competency based, with the College providing the theoretical and conceptual bases as well as facilitating the development of generic helping skills. Students will further develop and demonstrate their knowledge and skills within a community setting.

Students will get the training they need so that they will be prepared for careers in the helping professions and will be able to compete successfully in the job market. The community is served through trained personnel who will meet the demands for increased social services in our society.

Among the special characteristics of Fitchburg State's program, in addition to the interdisciplinary approach, is the coordination of supervised work experiences with academic studies. This experience involves working in organizations under professional supervision in conjunction with human service course work taken at Fitchburg State College. This gives students experience which strengthens their position when pursuing a career. Further, it gives them a more realistic basis for choosing a career, and it gives potential employers an opportunity to screen students based on job performance. Students are also encouraged, throughout their stay at Fitchburg State College, to gain additional experiences through volunteer activities.

Concentrations in Human Services

The Human Services program at Fitchburg State College offers Concentrations in six areas: Human Services Generalist; Administration; Family and Children's Services; Gerontology/Aging; Juvenile/Criminal Justice, Mental Health, and Social Work. Students should meet with their Human Services advisors to learn about the recommended course work and the career possibilities related to each concentration.

Admission and Retention Policy

A student may enter the Human Services Major by either declaring it as a major upon admission to the college or as an internal transfer (transferring into the Human Services major from another major within this college). A student who has declared Human Services as a major upon admission (as a freshman or as an external transfer) will be subject to retention reviews by the Human Services Review Committee following the completion of Introduction to Human Services. Retention will be based upon both academic performance and suitability for the field. See Index for Academic Standards Policy.

Program Structure

There are four components to the major:

A. The Human Service Core

(these courses are required for all majors)
HMSV 1100 Introduction to Human Services
HMSV 2500 Interviewing Techniques
HMSV 2900 Social Group Work
HMSV 3800 Methods of Case Recording and Analysis
HMSV 4870, 4880, or 4890 Field Work in Human Services

There are two Field Work options: (1) a Block Placement, for 12 credits, involving 36 hours weekly for one semester (fall or spring); or (2) 18 hours weekly for two semesters (6 credits each) beginning in the fall and continuing until the end of the spring semester. Since some agencies only accept one or the other option for placements, it is essential for a student to plan well in advance in order to know if placement will begin in the fall or spring, as well as to complete all prerequisites to Field Work at least one semester prior to placement.

Admission into the Human Service Program does not guarantee entry into Field Work. Eligibility for Field Work will be assessed by the Human Services Review committee according to the criteria established in the Academic Standards Policy. (see Index)

B. Human Services Behavioral Sciences Area

Students must take PSY 2200, Human Growth and Development, and PSY 2350, Abnormal Psychology plus nine more credits in Psychology, Sociology and/or Human Services. Six of the nine credits must be in Human Services.

These courses must be relevant to career goals and must be approved by a student's Human Services advisor and notation to that effect must be placed in the student's folder.

C. Related Courses

Students must take nine credits in courses in departments other than Behavioral Sciences. These courses must be relevant to career goals and Field Work plans. This requirement may be fulfilled by taking courses in one or more departments, e.g. business administration, computer sciences, special education, political science, economics, English, biology, philosophy, physical education, speech, etc. These courses must be approved by a student's Human Services advisor. Notation to that effect must be placed in the student's folder.

D. Government Knowledge Requirement

Graduates of the Human Services Program are required to demonstrate knowledge of Federal and State Government. Students may meet this requirement by either passing a written examination administered by the Department of Social Sciences or successfully completing one of the following courses: State and Urban Government, The Federal Government, Civil Rights and Civil Liberties. Introduction to the Legal Process, United States History I, United States History II.

Physical Education Specializations in Human Services

Students in Human Services may specialize the Dance, Recreation, or Dance/Recreation by selecting four three-credit professional preparation courses and four one-credit physical activity courses under the guidance of the Physical Education Department.

Voluntary Experiences

It is to the student's advantage to gain experiences in agencies beyond those required in courses. Students may become familiar with area agencies through the Human Services Fair, held at Fitchburg State College. Wherever students work, they should obtain letters of recommendation for their placement folders. This will aid students in course work at Fitchburg State College and also when applying for employment or to graduate school.

Policy Regarding Liability Insurance

Liability Insurance will be required of all Human Services Majors and all other students taking a Human Services course which involves a practicum experience.

Policy Concerning Human Service Major and Advisor Meetings

There is a departmental policy concerning meetings called for majors and meeting with a student's academic advisor. The policy is that failure to attend departmental meetings called for Behavioral Science majors and/or failure to contact advisors may be grounds for a student's name to be dropped from the roster of those listed in the major.

Course Offerings

An asterisk indicates that the course may be offered less than once every two years.

"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

HMSV 1100 **3 cr. 3 hr.**
Introduction to Human Services
An introduction to the general field of Human Services. Course goals include an introduction to the scope and nature of Human Services work, and the agencies, organizations, and intervention models utilized. Particular focus is on the underlying philosophies, issues, and dynamics in agency/organization function. Guest lecturers from agencies, student presentations, agency reports, and a required practicum experience (30 hours per semester) represent priority activities

in the course. This course is a prerequisite to all Human Services courses.

***HMSV 1150 3 cr. 3 hr.**
Community Resources
This course will acquaint students with the services of a variety of public (federal, state, and local) and private voluntary nonprofit agencies which provide services for various populations. Students will learn what services are provided, how to obtain services, how to make referral to these agencies, and how the agencies are operated (including staffing, funding, and administrative aspects of the agencies). This course may emphasize special types of agencies/populations in different semesters.
Prerequisite: HMSV 1100.

HIST 2000 3 cr. 3 hr.
Introduction to Criminal Justice
This course provides the student with an overview of the structure and organization of the criminal justice system through an examination of the functions and decision processes of those agencies that deal with the management and control of crime and criminal offenders. The course will include didactic presentations, assigned readings, class discussions, visiting practitioner lecturers, and small group discussions.

***HMSV 2200 3 cr. 3 hr.**
Delivery of Human Service Systems
This course will deal with social agencies/organizations: how they establish goals, priorities and programs; how they are governed, staffed and financed; and how each relate to the needs of the people in the area served. Content may differ according to the delivery system being addressed. A practicum (20 hours per semester) is required.
Prerequisite: HMSV 1100.

***HMSV 2300 3 cr. 3 hr.**
Introduction to Rehabilitation Counseling
An overview of the vocational rehabilitation process in the U.S., including its history and governing federal legislation. Emphasis will be placed on the medical, psychological, sociocultural, and vocational factors in rehabilitation of handicapped individuals. This course will focus on the role of the Rehabilitation Counselor as a professional in the rehabilitation process.
Prerequisite: HMSV 1100.

HMSV 2400 3 cr. 3 hr.
Crisis Intervention
This course focuses on the concepts and techniques of Crisis Intervention. Many individuals are faced with such crisis situations as job loss, unwanted pregnancy, divorce, operations, death and dying. Specialized short-term techniques have been developed to help people in these situations. Students will also be required to spend approximately 4 additional hours per week in a crisis center for supervised experiences. The crisis center may ask students for a commitment beyond one semester.
Prerequisites: HMSV 1100, PSY 2350.

HMSV 2500 3 cr. 3 hr.
Interviewing Techniques
Skills in interviewing are essential to the development of professional competencies in the helping professions. This course is designed to help the student learn about the problems and processes of interviewing while developing basic skills needed to become an effective interviewer. The course will include assigned readings, class discussions, taped interviews, demonstrations, and practice sessions in class. Meets LAS requirement for Speaking and Listening for the Human Services major and for the Psychology major.
Prerequisites: HMSV 1100, PSY 2350 and permission of Instructor. Students must preregister in the semester prior to the course.

HMSV 2600 3 cr. 3 hr.
Juvenile Justice
A course designed to develop student awareness of past and contemporary philosophies, practices, and paradoxes of juvenile justice. The course will examine the programmatic efforts designed for juveniles "in trouble with the law" and will focus on the relationships between the components of this system of justice. The content of the course will be supplemented by current journal research, lectures, and panel discussions by practicing professionals, and a field-based class.

A supervised practicum (20 hours per semester) is encouraged.
Prerequisite: HMSV 1100, HMSV 2000.

HMSV 2700 **3 cr. 3 hr.**
Services to Children
Students examine the variety of services available to children to support, supplement, and substitute for the family. Students will learn to understand the structure of the services provided, and to explore the ethical dilemmas which such services may create.
Prerequisite: HMSV 1100.

HMSV 2800 **3 cr. 3 hr.**
Social Work: Theory and Practice
Social Work is one of the central professions in the Human Services. This course will deal with the history, concepts, basic issues and techniques of social work including casework, group work and community organization activities. Advanced study and career opportunities will also be explored.
Prerequisites: HMSV 1100, SOC 1100.

HMSV 2900 **3 cr. 3 hr.**
Social Group Work
Exposes students to the theories and techniques of working with clients in groups. The course will focus on social group work as a method, its relationship to other social work methods, and to groups therapies. Students will have the opportunity to observe and/or lead groups. A supervised practicum (30 hrs. per semester) is required.
Prerequisites: HMSV 1100 and permission of Instructor. Students must preregister in the semester prior to the course.

HMSV 3000 **3 cr. 3 hr.**
Human Services Administration
The study of Human Services Administration is an exploration of administrative functions and their relationship to organizational effectiveness and efficiency. The internal and external politics of agency survival are addressed, and the theoretical concepts of management and leadership styles are explored. Course content is supplemented by lectures and panel discussions by practicing professionals, field-based classes, and current journal research. A supervised practicum (20 hours per semester) is encouraged.
Prerequisite: HMSV 1100.

HMSV 3100 **3 cr. 3 hr.**
Social Casework
This course will explore casework concepts and techniques as utilized in a variety of settings, e.g. family agencies, mental health settings, hospitals, courts. The focus will be on the casework process with individuals, couples, and families.
Prerequisites: HMSV 1100, HMSV 3500.

HMSV 3200 **3 cr. 3 hr.**
Working with the Aging
Examines past as well as contemporary philosophies, practices, and processes of working with the aging. Further, the course examines the various roles and practices utilized by social support and works in maintaining the social, psychological, and physical well-being of the aged. A supervised practicum (20 hrs. per semester) is required.

HMSV 3300 **3 cr. 3 hr.**
Probation and Parole
This course focuses on the correctional philosophy of probation by developing an understanding of its historical and legal evolution, its essence, and its ad ministration in varied court systems. The responsibilities of probation professionals are explored in conjunction with criminal justice issues and practices which affect the court's decision to use this alternative to incarceration. Course content is supplemented by current journal research, lectures by practicing professionals, and a field-based class. A supervised practicum (20 hours per semester) is encouraged.
Prerequisite: HMSV 1100.

***HMSV 3400** **3 cr. 3 hr.**
Community Organization
This course will focus on methods used in organizing citizen action groups to bring about change. Principles, methods, and techniques of organizing, goal formulation, group maintenance, community planning, and strategies will be studied.
Prerequisite: HMSV 1100, HMSV 2000.

HMSV 3500 **3 cr. 3 hr.**
The Abuse and Neglect of Children
This course will present an overview of concepts vital to understanding and working with the abusive and neglectful parent including: differentiation between abuse and neglect, reporting responsibilities, legal aspects, prognosis, prediction, and the role of the community. Case studies will be used to enhance student understanding.
Prerequisites: HMSV 1100 and PSY 2200.

HMSV 3580 **3 cr. 3 hr.**
Social Welfare Policy
This course enables students to learn the importance of social welfare policy, the relationship of values to policy formulation, and how to analyze policy. Students apply this knowledge to income maintenance, poverty, health and mental care, housing and neighborhood living space, and to the general problems of service delivery.
Prerequisite: HMSV 1100.

HMSV 3800 **4 cr. 8 hr.**
Methods of Case Reporting and Analysis
Exposes students to the technical and practical skills involved in the process of preparing, recording, presenting, and analyzing individual case reports. Case report applications as they relate to schools, clinics, the courts, and other human service agencies will be addressed during the course. A supervised practicum in an approved agency setting (90 hrs. per semester) is required. Meets LAS requirement for Writing for the Human Services major.
Prerequisites: PSY 2350, HMSV 2500 and permission of Instructor. Students must preregister in the semester prior to the course.

HMSV 4870-4880, 4890 **6 cr. 18 hr.**
12 cr. 36 hr.
Field Work in Human Services
Field Work is the structured academic experience which allows Senior Human Services majors who have successfully met eligibility criteria to integrate and apply the skills and theory of the Human Services discipline in a field-based setting. Such an experience helps the student develop an understanding of the effects of administrative practices and governing policies on the ability to carry out the responsibilities of his/her field placement.

Students participate under the supervision of qualified professionals in Human Service Organizations, e.g., mental health agencies, social services, hospitals, prisons, family service agencies, probation departments, residential programs, nursing homes, community advocacy organizations, programs for the aging, crisis centers, etc. Also, some placements are conducted in industrial settings, e.g., community relations, employee assistance programs, personnel departments, corporate donations, human resource development programs.

Placements may be in direct-service or in administrative settings. In addition to the field experience, students participate in a weekly seminar held by the college's supervising professor. Here, students share their experiences and develop heightened awareness of their roles in the organizations in which they are functioning.

HMSV 4870-4880: students will work in an agency 18 hours per week throughout the school year, beginning in September. (6 credits each semester.) HMSV 4890: a block placement of 36 hours per week for one semester, either Fall or Spring. (12 credits, one semester.) Students must have completed their prerequisites at least 1 semester before taking Field Work and must preregister with the Field Work/ Internship office in the beginning of the semester prior to the semester before they plan to enter an agency, i.e, students planning a Fall placement must have completed their prerequisites by the end of the previous Fall semester and pre-register with the Instructor early in the previous Spring. Students must have had previous volunteer experience prior to enrolling in Field Work.
Prerequisites: HMSV 2900, HMSV 3800, and successful completion of the Field Work eligibility requirements.

HMSV 4900 **1-6 cr., 3-18 hrs.**
Independent Study
Independent Study is offered to outstanding students of Junior or Senior standing and requires approval of the professor, of the Human Services Curriculum Committee, and of the Chairman of the Behavioral Sciences department. Independent Study may take the form of special advanced reading programs or problem identification and research. Under no circumstances will independent study be substituted for regularly scheduled courses.

HMSV 5000 **3 cr. 3 hr.**
Topics in Human Services
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may also be taught on an experimental basis under this title.

Industrial Technology

Chairperson:
Stanley Bucholc

Professor:
Robert Kokernak

Assoc. Professors:
Stanley Bucholc
Lloyd Harte
Edward Martens
Luther Tabor

Asst. Professors:
James Andrews
Sanjay Kaul
John Colluccini
Edson Phelps
Steven Therrien

Instructor:
Daniel Grant

The Major in Industrial Technology

The Industrial Technology department is unique at Fitchburg State College in that it offers two major degree programs and five concentrations: the degree of Bachelor of Science in Education, with a major in Technology Education (124 semester hours); and the degree of Bachelor of Science in Industrial Technology (120 semester hours), with concentrations in Construction Technology, Electronics Engineering Technology, Graphic Arts Technology, or Manufacturing Technology.

Technology Education Major (Grades 5-12)

The Technology Education program prepares students for a teaching career. Successful completion of the 43 credit major enables the graduate to meet the provisional certification requirements of the Commonwealth of Massachusetts. The program also requires a major in the Liberal Arts or Sciences in addition to the Education Major. Upon certification, the graduate is eligible to teach in the public schools (grades 5-12) in the following curriculum areas:

Communication
Construction
Manufacturing
Power Energy and Transportation

The student must then participate in a program to attain standard certification, as stipulated in state regulations.

The common core of required technical courses (24 S.H.) is organized into the four technology clusters of manufacturing, construction, communication, power, energy and transportation. Students will complete two courses in each of the four clusters for a total of twenty-four semester hours. These required courses are designed to provide the individual with minimum technical competencies necessary to teach technology education at the public school level. Basic fundamental processes and safety techniques are presented. Lastly, the professional sequence (15 S.H.) provides the students with a combination of theoretical and practical experiences in educational pedagogy. To enroll in student teaching, the candidate must have a 2.5 cumulative average for all Technology Education courses and have successfully completed a first aid course, General Psychology (PSY 1100), Adolescent Psychology (PSY 2230), (PHIL 2000) Philosophy of Education, and received a positive recommendation from the faculty of the Industrial Technology Department.

Provisional Track Common Technical Core (24 S.H.)

Required Courses

Manufacturing Cluster

ITEC1300 3cr.
Wood Fabrication Systems
ITEC1200 3cr.
Metal Fabrication Systems

Communications Cluster

ITEC1400 3 cr.
Technical Drawing
ITEC1500 3 cr.
Graphic Arts Processes

Construction Cluster

ITEC2400 3 cr.
Architectural Drawing
ITEC2310 3 cr.
Structures I

Power Energy & Transportation

ITEC2600 3 cr.
Alternate Energy
ITEC 3600 3 cr.
Advanced Alternate Energy

Professional Sequence (15 S.H.)

ITEC4840 3 cr.
Prepracticum Seminar
ITEC3800 3cr.
Methods in Teaching T.E.
ITEC4860 9 cr.
Practicum in T.E.

Industrial Technology Major

In our complex industrial society, there exists an ever increasing need for trained personnel to meet the challenges of new and emerging technologies. The concentrations offered in the Industrial Technology program were developed with the intention of providing a pool of highly skilled technologists which will sustain the needs of industry within the Commonwealth as we approach the 21st century. The concentrations include Construction Technology, Electronics Engineering Technology, Graphic Arts Technology, and Manufacturing Technology.

15 - 18 semester hours of required core courses must be taken. Selections are made from the following:

Evolution of Industrial Technology
Computers in Industrial Technology
Technical Analysis
Technical Drawing
Electronics I
Metal Fabrication
Graphic Arts Processes
Alternate Energy
Wood Fabrication

Following the core courses, each concentration requires a unique combination of course offerings.

In addition to required courses, students select concentration electives with the help of a department advisor to enhance their technical competence. Courses from the math/science curriculum are also required in each concentration.

The Construction Technology Concentration

Provides students with information essential for managerial personnel in the construction industry. Students are exposed to a planned sequence of courses preparing them for on-site construction related activities. These include the coordination of workers, materials, subcontractors, and local, state, and federal regulatory agencies.

The following courses (27 semester hours) are among those required to assist the student in developing the skills necessary to function as a member of a construction management team:

Architectural Drawing
Structures I
Structures II
Drafting Commercial Structures
Environmental Energy Systems
Estimating & Bidding
Seminar in Construction
Strength of Materials
Construction Supervision

An additional 15 semester hours of technical electives are required to complete the program.

The Electronics Engineering Technology Concentration

Prepares students for positions in the challenging field of electronics by developing the theoretical and practical skills required for this discipline. Electronics and electronic

systems play a key role in modern industry serving as a source of power, as a means of affecting control, as a means of communication, and as a means of processing information.

The skills students need are acquired through a planned sequence of courses (21 semester hours) involving classroom work in conjunction with hands-on experience utilizing the most modern testing and measuring equipment. The required courses are:

- Electronics I
- Electronics II
- Electronics III
- Automated Manufacturing & Robotics
- Engineering Experimentation
- Statics
- Technical Analysis

An additional 24 semester hours of technical electives are required to complete the course.

The Graphic Arts Technology

Concentration provides students with technical experience in the printing and publishing industry. The needs for qualified Graphic Arts technical people has greatly increased as the overall makeup of the final product has changed. Today's printed products require higher quality, more color, and people with the appropriate technical expertise to coordinate these effects in a modern printing plant. As our society advances, the needs to transmit printed information increases at an ever higher rate.

The following technical courses (21 semester hours) are among those required to develop within the student the skills necessary to function in the Graphics Industry:

Offset Lithography

Production Printing

Screen Printing

Computers in Industrial Technology

Printing Estimating & Production Control

Seminar in Graphic Arts

Graphic Design

An additional 21 semester hours of technical electives are required to complete the program.

Manufacturing Technology

Is designed to develop both technical and analytical competencies required of entry-level positions within manufacturing engineering support. Many employers have stated the need for resourceful, technically competent people to interface between engineering and other personnel within the manufacturing environment.

The competencies are acquired through a sequence of courses involving laboratory experiments and additional coursework within the Math/Science curriculum. This combination provides the student with the practical knowledge of manufacturing processes, the ability to apply these processes, and the ability to plan, coordinate, and implement aspects of production projects.

Among the required courses (21 semester hours) designed to develop these skills are the following:

- Strength of Materials
- Statics
- Automated Manufacturing & Robotics
- Engineering/Experimentation
- Design & Planning
- Production Planning & Control
- Automated Drafting Systems

An additional 24 semester hours of technical electives are required to complete the program. One option in this area are courses in plastic technology, to prepare manufacturing students for this growth industry.

Internships

Senior status students in all concentrations are eligible to participate in the Internship program, allowing a student with an appropriate grade average to receive up to 12 academic credits for a one semester work experience.

The Minor in Industrial Technology

The minor in industrial technology offers a concentration in manufacturing, construction, electronics, graphics arts or industrial training.

Manufacturing Technology

ITEC 2720 Robotics I
ITEC 3730 Automated Manufacturing & Robotics II
ITEC 2410 Automated Drafting Systems ITEC 1310 Materials
Two approved electives

Construction Technology

ITEC 2400 Architectural Drawing
ITEC 2310 Structures I
ITEC 3300 Estimating and Bidding
ITEC 3320 Construction Supervision
Two approved electives

Electronics Engineering Technology

ITEC 1100 Electronics I*
ITEC 2100 Electronics II*
ITEC 3100 Electronics III*
Three approved electives
*Students with equivalent course may substitute technical elective.

Graphics Arts Technology

ITEC 1500 Graphics Arts Processes or
ITEC 2500 Offset Lithography
ITEC 3520 Printing Estimating and Production Coordination
ITEC 2520 Graphic Design or
COMM 3810 Graphics I
Two approved electives

Industrial Training

ITEC 3800 Methods of Teaching Technology Ed.
ITEC 3810 Curriculum Development in Technology Ed.
COMM 2350 Communications Technology
Three approved electives

Prerequisites: Application and departmental approval; prerequisites may be waived based upon an individual's experience and background.

Interdisciplinary Graphics Minor, see Graphics.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

ITEC 1100 **3 cr. 4 hr.**
Electronics I
This beginning course will provide an overview of electronics technology by introducing students to selected topics in linear circuits, analog electronic circuits, and digital electronic circuits.

ITEC 1200 **3 cr. 4 hr.**
Metal Fabrication Systems
Study of mass production theory, systems, and procedures in metal working.

ITEC 1300 **3 cr. 4 hr.**
Wood Fabrication Systems
Fundamental woodworking techniques are studied as they relate to construction and manufacturing. Procedures are practiced through selected laboratory experiences.

ITEC 1310 **3 cr. 4 hr.**
Materials Testing
An overview of selected materials and their properties including laboratory experiences designed to give students an understanding of materials testing.

ITEC 1400 **3 cr. 4 hr.**
Technical Drawing
This course will include lettering, dimensioning, orthographic projection, symbols, sectioning, isometric, and auxiliary views. Problem development and blueprint reading will be stressed.

ITEC 1500 **3 cr. 4 hr.**
Graphic Arts Processes
Production and evaluation of messages utilizing graphic arts processes. This includes typesetting, camera work, stripping, platemaking, and offset press operations.

ITEC 1600 **3 cr. 4 hr.**
Alternate Energy Sources
The study of solar and other forms of energy to supply household needs. Students build and test both commercial and laboratory made devices.

ITEC 1700 **3 cr. 3 hr.**
Evolution of Industrial Technology
Study of the history of industrial technology, and the qualifications, duties, and responsibilities of related careers. A field based prepracticum experience is an integral part of this course. This experience may be in a school or industrial setting.

ITEC 1710 **3 cr. 3 hr.**
Technical Analysis
Applications of mathematics to a variety of technical areas including electronics and mechanics. Topics include: complex numbers, Lissajou figures, vectors, curve fitting, error analysis, and computer methods.

ITEC 2100 **3 cr. 4 hr.**
Electronics II
This course will begin to develop the concepts and techniques appropriate to design and analysis of linear and analog electronic circuits. Electronic circuits employing discrete devices will be introduced.
Prerequisite: ITEC 1100.

ITEC 2200 **3 cr. 4 hr.**
Advanced Metal Fabrication Systems
Specialized processes in the metal working industry will be studied. Laboratory experiences will include performing operations with tool cutter grinders, indexing heads, numerical control millers, turret lathes, and tracer lathes.
Prerequisite: ITEC 1200.

ITEC 2300 **3 cr. 4 hr.**
Wood Products Manufacturing
Emphasis on the mass production of a product employing the development and use of jigs, fixtures and other suitable mass production procedures. Appropriate methods of production management are employed.
Prerequisites: ITEC 1300, ITEC 1400.

ITEC 2310 **3 cr. 4 hr.**
Structures I
A study of the construction industry with emphasis on construction methods, practices and procedures. A study of materials, equipment, and techniques used to construct a structure as well as research in architectural problems related to construction. Taken with ITEC 2400.
Prerequisites: ITEC 1300, ITEC 1400.

ITEC 2400 3 cr. 4 hr.
Architectural Drawing
Students design a practical residential structure, conforming to standard practices and Building codes. Technical skills are developed enabling students to communicate ideas. Topics include materials of construction, history and development of various styles, orientation of house on lot, loads, and design of structural members. Field trips and available films are used. Taken with ITEC 2310.
Prerequisite: ITEC 1400.

ITEC 2410 **3 cr. 4 hr.**
Automated Drafting Systems
This course is designed to teach the general concepts related to automated drafting with a special emphasis on technical drawing. Specialized applications of industrial practices for drafting will be experienced in this course. One semester of technical or mechanical drafting is a prerequisite. A computer background is not necessary.
Prerequisite: ITEC 1400.

ITEC 2500 **3 cr. 4 hr.**
Offset Lithography
The students study the lithographic form of printing as it is used in modern industry. The majority of the course is spent in the darkroom and setting up and running offset presses. Concepts include line copy, halftone, special effects, diffusion transfer, and density. Roles students will pursue are designer, photographer, flat-stripper, platemaker, press operator, and binder.
Prerequisite: ITEC 1500.

ITEC 2510 **3 cr. 4 hr.**
Production Printing
Emphasis on scheduling and production of contracted jobs. The course is designed to allow serious students to apply their previous instruction in a controlled, industrial typesetting. Enrollment is limited to ten students.
Prerequisites: ITEC 2500 and permission of the Instructor.

ITEC 2520 **3 cr. 3 hr.**
Graphic Design
Design and production of messages will be studied. Students will prepare artwork and mechanicals using equipment found in the Industrial Technology Department. The technology of communications will also be included.
Prerequisite: ITEC 1500 (credit will NOT be given for both COMM 3810 and ITEC 2520.)

ITEC 2600 **3 cr. 4 hr.**
Advanced Alternate Energy Sources
Course is limited to students who have demonstrated the ability and desire to continue the research and development of a solar energy system that showed promise in ITEC 1600.
Prerequisites: ITEC 1600 or permission of Instructor.

ITEC 2700 **3 cr. 3 hr.**
Man Technology Society
Study of universal characteristics of technology, including effects of technology on society and culture. Topics of interest are researched.

ITEC 2710 **3 cr. 3 hr.**
Statics
Study of laws of static equilibrium of real bodies. Includes beam and structural analysis, friction, centroids, and moments of inertia.
Prerequisite: ITEC 1710.

ITEC 2720 **3 cr. 4 hr.**
Computers in Industrial Technology
This course will familiarize students with computers through presentation of selected hardware and software concepts. Opportunities for extensive hands-on practice with application programs will be provided.

ITEC 2730 **3 cr. 4 hr.**
Automated Manufacturing & Robotics I
This course will provide an opportunity to learn the fundamentals of industrial robotics. Basic theory and practice will be stressed. Topics that will be studied and experienced will include robotics terminology, robot classification, industrial robot programming, and robot classifications.

ITEC 2740 **3 cr. 4 hr.**
O.S.H.A.
Introduction to the latest occupational safety and health standards and to provide opportunity for the student to perform practical inspections, complete reports, and recommend corrective measures to insure safety and healthful conditions. Basic First Aid instruction is included.

ITEC 2750 **3 cr. 4 hr.**
Plastics Technology
An investigation of the rapidly expanding area of plastics, how they are produced, their merits and limitations. Tests are conducted to confirm reference data and to promote a better understanding of various plastics and products made from them.
Prerequisite: Some background in Chemistry essential.

ITEC 2770 **3 cr. 4 hr.**
Introduction to Experimentation
Emphasis is on the accumulation and evaluation of experimental data. Topics include literature surveys, project organization and managements, types and uses of instrumentation, instrument accuracy, statistical analysis of data, design of experiments, and report writing techniques.
Prerequisites: ITEC 1710 and four of the appropriate freshman level courses.

ITEC 2780 **3 cr. 4 hr.**
Materials Technology
Topics include atomic bonding, atomic arrangements, structural imperfections, electronic structures and processes, phases and reaction rates, and stability of materials in service environments.
Prerequisite: ITEC 1710 or permission of Instructor.

ITEC 2900 **3 cr. 4 hr.**
Designing and Planning
Elements of product design are experienced through problem solving. Drafting, human engineering and product analysis and incorporated in design and construction of prototypes.
Prerequisites: ITEC 1710 and four of the appropriate freshman level courses.

ITEC 3100 **3 cr. 4 hr.**
Electronics III
This course will further develop the concepts and techniques appropriate to the design and analysis of analog electronic circuits. It will provide sufficient background for students who wish to elect upper level electronics courses.
Prerequisites: ITEC 1100, ITEC 2100.

ITEC 3110 **3 cr. 4 hr.**
Digital Electronics
An introduction to the techniques for analyzing and synthesizing digital circuits. Emphasis in design work is on IC technology.
Prerequisites: ITEC 1100, 2100, 3100.

ITEC 3120 **3 cr. 4 hr.**
Control Theory
Introduction to control theory utilizing examples of mechanical, fluidic, electronic, and hybrid control systems. Emphasis is on design utilizing the project approach.
Prerequisite: ITEC 3100.

ITEC 3210 **3 cr. 4 hr.**
Machine Processes
The design and fabrication of metal products utilizing machine tools, metalworking processes and welding.
Prerequisite: ITEC 2200.

ITEC 3220 **3 cr. 4 hr.**
Product Modeling and Rendering
A laboratory course focusing on the preparation of product renderings and the development of three dimensional models for presentation and analysis of design products, processes, or systems. The course will cover the types and uses of renderings and models, techniques and standards in their development, and appropriate material representation.
Prerequisites: ITEC 1300, 1400, 2900.

ITEC 3300 **3 cr. 4 hr.**
Estimating and Bidding
The principles of preparing comprehensive unit pricing and systems approach for construction will be taught in this course. The emphasis will be on detailed estimates in order to determine the scope and cost of each proposed design element.
Prerequisites: ITEC 2310, 2400.

ITEC 3310 **3 cr. 4 hr.**
Environmental Energy Systems
A survey course concerning itself with the principles of heating, ventilating, air conditioning, purification, and control systems, as well as electrical and electronic control and delivery systems, water feed and delivery system, and waste water disposal systems.
Prerequisites: ITEC 2310, 2400.

ITEC 3320 **3 cr. 4 hr.**
Construction Supervision
This course will enhance the student's understanding and skills for the function of supervision of a construction project. The emphasis will be on coordinating all of the construction resources including materials and manpower needed for the successful completion of on-site structure.
Prerequisites: ITEC 2310, 2400, 3300, 3310.

ITEC 3330 **3 cr. 4 hr.**
Wood Technology
Students are introduced to a series of industrial techniques through which lumber is used to produce products. Veneering, patternmaking, model building, finishing, laminating, and bending are some of the techniques to be explored.
Prerequisite: ITEC 1300.

ITEC 3340 **3 cr. 4 hr.**
Structures II
A study of the construction techniques and structural elements with an emphasis on heavy construction procedures use in commercial and industrial projects. Taken with ITEC 3410.
Prerequisites: ITEC 2310, 2400.

ITEC 3400 **3 cr. 4 hr.**
Engineering Drawing
This course includes orthographic projection, intersections, developments, revolutions, axonometrics, assembly details, and pictorial drawings.
Prerequisites: ITEC 1400, ITEC 2410.

ITEC 3410
Drafting Commercial Structures
Students develop and produce working drawings, demonstrations, information schedules and portfolios related to the construction of non-residential properties. Taken with ITEC 3340.
Prerequisites: ITEC 2400, 2310.

ITEC 3500 **3 cr. 4 hr.**
Screen Printing
Students work with both hand-cut stencils and photo-direct emulsions. Emphasis is on multiple color registration and halftoning, using both hand and machine printing techniques. LAS
Prerequisite: ITEC 1500 or permission of Instructor.

ITEC 3520 **3 cr. 3 hr.**
Printing Estimating and Production Coordination
This course provides students with an opportunity to properly determine how to estimate printed products. Relationships between the estimating depart-

ment, sales, customer service, order writing and production departments will be covered.
Prerequisite: ITEC 2500.

***ITEC 3530 3 cr. 4 hr.**
Typography I: Dynamics and Disciplines
Origins of the alphabet, evolution of type, traditional typography, nomenclature, classification of typefaces: planning, layout, the budget considerations; dimensional coordination, proportion and the grid system, copyfitting, markup, and proofreading; composition and computer technology. Organized for a reciprocity of subject matter in a technological environment.
Prerequisites: ITEC 1500, 2500.

ITEC 3700 3 cr. 4 hr.
Fluid Power Technology
This course introduces the student to applications of fluid power in a variety of industries. Topics include properties and behavior of liquids and gases, schematic diagrams for hydraulic and pneumatic circuits, component uses and characteristics, methods of controlling fluid power systems, circuit design and analysis, and uses of hydraulic/pneumatic systems in automated manufacturing.

ITEC 3710 3 cr. 4 hr.
Quality Control
A course which develops and utilizes those statistical methods that enhance quality control within a manufacturing environment. Lab work includes the use of a variety of inspection instruments and small scale testing is done to generate data.

ITEC 3730 3 cr. 4 hr.
Automated Manufacturing and Robotics II
To develop competencies in the set-up, control, and use of CNC equipment; and to develop integration (CIM) applications between robots (for material handling and assembly) and CNC automated manufacturing equipment.
Prerequisites: ITEC 1200, 1400.

ITEC 3800 3 cr. 3 hr.
Methods of Teaching Technology Education
This course is designed to provide the prospective technology education teacher with a series of related academic, observational and participating experiences based on the fundamental elements of the teaching-learning process. Students will develop, implement, and evaluate a variety of short-range instructional methods.
Prerequisite: Junior Status.

ITEC 3810 3 cr. 4 hr.
Curriculum Development in Technology Education
During this course the student will be presented experiences which relate directly to the development of a course of study. Students will also have the opportunity to analyze and develop strategies pertaining to curriculum development. Students also experience a pre-practicum in a public school technology education program.
Prerequisite: ITEC 3800.

ITEC 3900 3 cr. 3 hr.
Production Planning and Control
Theory and practice in the essentials necessary for the operation of a manufacturing or service facility are the main thrust of this course. Layout of production, line operations, time study requirements and related work problems resulting in an economical and efficient operation are included.
Prerequisite: ITEC 1100, 1200, 1300, 1400 or Permission of Instructor.

ITEC 3910 3 cr. 4 hr.
Engineering Experimentation
Using a series of open-ended projects, this course prepares the student to work independently in a variety of technical areas. Topics include: steps in the creative process, research using technical literature, error analysis for single-sample and multi-sample experiments, types of instrumentation, and technical report writing. This course satisfies the junior level writing requirement for industrial technology students.
Prerequisites: ITEC 1710 and Instructor permission.

ITEC 3930 3 cr. 4 hr.
Strength of Materials
An introduction to the behavior of real materials under the influence of forces and couples. Axial, shear, torsional, and flexural stresses and strains are determined.
Prerequisites: ITEC 1710, ITEC 2710.

ITEC 4100 **3 cr. 4 hr.**
Industrial Electronics
Study of application of electronic principles to devices and equipment involving thermoelectronics, photoelectronics, solid-state motor control, welding, etc.
Prerequisite: Permission of Instructor.

ITEC 4110 **3 cr. 4 hr.**
Electronic Communications Systems
The system and circuits utilized in electronic communications will be studied including both transmitters and receivers. Methods of modulation will be discussed. Television will be utilized as a representative system.
Prerequisite: Permission of Instructor.

***ITEC 4210** **3 cr. 4 hr.**
Welding and Casting
Instruction and laboratory experiences are designed to provide students with the basic knowledge and techniques of welding, cutting, and braizing using oxyacetylene welding equipment. Instruction and laboratory experiences are designed to provide students with the basic knowledge and techniques of AC and DC welding and inert gas welding. Students acquire basic knowledge and application of casting techniques used in the non-ferrous casting industry. Field trips to casting industries are included in the course.

***ITEC 4220** **3 cr. 3 hr.**
Design of Machine Elements
Introduction to design principles and failure modes for various mechanical components. Includes static and fluctuating Loads for brittle and ductile materials, fatigue stress concentrations.
Prerequisites: ITEC 3400, 3930.

***ITEC 4300** **3 cr. 4 hr.**
Jig and Fixture Design and Construction
Introduction in the principles of jig and fixture design are covered. The students construct simple jigs and fixtures for various applications.
Prerequisites: Four of the appropriate freshman level courses.

ITEC 4310 **3 cr. 4 hr.**
Seminar in Construction
This course is open to students specializing in construction. The course will deal with current trends and issues facing the construction industry at local, state, and federal levels. The emphasis is on utilizing available resources to solve current problems.
Prerequisites: ITEC 2310, 2400, 3300, 3320.

***ITEC 4400** **3 cr. 3 hr.**
Descriptive Geometry
Descriptive geometry is concerned with graphical representation and the solution of problems using spacial relationship of points, lines, and planes by means of projections.
Prerequisite: ITEC 3400.

***ITEC 4500** **3 cr. 4 hr.**
Process Color Separation
Students experience the direct screening process obtaining four separation negatives with masks. The negatives are printed by means of a color key.
Prerequisite: ITEC 2500.

ITEC 4520 **3 cr. 3 hr.**
Seminar in Graphic Arts
Students will study and discuss current trends, issues, problems, and technical material. Emphasis will be placed on comprehending why the trends must take place and how the emerging technology will allow this to happen. Students will be able to project future technical trends within the graphic area.
Prerequisite: ITEC 2500.

ITEC 4730 **3 cr. 4 hr.**
Problems of Mechanical Maintenance
A course designed to investigate problems encountered in the maintenance of mechanical equipment. Topics covered are lubrication, bearing installation, replacement of parts, safety, and color dynamics.

***ITEC 4800** **3 cr. 4 hr.**
Technology Education for Special Education
Fundamentals of planning and constructing teaching aids of projects are stressed. Knowledge of tools, machines, and processes is covered.

ITEC 4840 **3 cr. 3 hr.**
Pre-practicum and Seminar
Opportunity to formulate concepts of technology education and develop a working knowledge of principles and practices of technology education

administration. Pre-practicum experiences are also included. State requirement for certification.
Prerequisites: ITEC 3800, 3810.

ITEC 4860 10 cr. 30 hr.
Practicum in Technology Education
Experience in planning and implementing instructional strategies in a public-school setting. Requirements include self-evaluation. State requirement for certification.
Prerequisite: Permission of Instructor.

ITEC 4960 12 cr. 36 hr.
Internship in Industrial Technology
Students participate in an industrial experience with the approval of the Industrial Technology faculty.

ITEC 4900 3 cr.
Independent Study
Students may enroll in a directed study.

ITEC 5000 3 cr. 3 hr./3 cr. 4 hr.
Topics in Industrial Technology
Courses having a more narrow focus or those taught in an irregular basis may be offered. New courses may be taught on an experimental basis under this title.
Prerequisite: Permission of Instructor.

Mathematics

Chairperson:
Gerald Higdon

Professors:
Richard Bisk
Christine Cosgrove
Ernest Fandreyer
Barry Light

Assoc. Professors:
Lucy Dechene
Gerald Higdon
Claire McAndrew

Asst. Professors:
Robert Bentley
Robert Clark
Donald Freeburg
Abdulkeni Zekeria

Introduction

The Department of Mathematics serves all students at Fitchburg State College.

In all of its courses, the Mathematics Department seeks to support the College's "high standards of intellectual performance."

Mathematics majors receive a comprehensive foundation in abstract and applied mathematics as preparation for graduate school or a professional career. Minors in Mathematics receive the mathematical foundation needed for advanced work in their major field.
The Mathematics Department serves other students through courses for their major or through courses for their Liberal Arts and Science Program.

The Major in Mathematics

The Bachelor of Science and the Bachelor of Arts in Mathematics must include Calculus I, II, III, and IV, Introduction to Mathematical Thought, Linear Algebra, Abstract Algebra, Mathematics Seminar and at least fifteen additional semester hours of advanced mathematics (3000 or 4000 level), at least nine of which must be at the 4000 level. (Note: MATH 4850 and MATH 4860 are not advanced mathematics courses.) One course in Computer Science is required at the level of CSC 1500 or higher. Graduate courses may be substituted for 4000 level courses. The Bachelor of Arts degree requires foreign language proficiency at the second year level.

Provisional Certification for Teaching Mathematics

Students interested in teaching Mathematics on the secondary level will need to complete the provisional certification track. The requirements are as follows:

Major: Mathematics

Core Courses

MATH 2860 Introduction to Secondary School Teaching	3 cr.
ENGL4700 Teaching Writing in Secondary Schools	3 cr.
MATH4850 Special Methods in Mathematics	3 cr.
MATH4860 Mathematics Practicum in Secondary School(150 hrs.)	6 cr.
	15 cr.

External Requirements for all Secondary Education Students:
Liberal Arts and Sciences Distribution which includes:
PSY2230 Adolescent Psychology

The Minor in Mathematics

A minor in Mathematics contains 21 semester hours of which 12 semester hours are taken in Calculus I, II, and III and either Abstract or Linear Algebra. The additional three elective courses may be chosen from Introduction to Mathematical Thought or any mathematics course at the 3000 or 4000 level. At least one of the three electives must be at the 4000 level.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

MATH 0100 3 inst. cr. 4 hr.
Basic Mathematics I
A review of basic arithmetic skills and an introduction to elementary algebra.

MATH 0200 3 inst. cr. 4 hr.
Basic Mathematics II
A continuation of Basic Mathematics I. Concepts studied are from Elementary Algebra through quadratic equations.

Note 1: Institutional Credits (inst. cr.) do not count toward graduation.

Note 2: All students must pass the Math Placement Exam or MATH 0200 before they will be permitted to take any of the following mathematics courses.

MATH 1200 3 cr. 3 hr.
Finite Mathematics
A variety of discrete mathematical models are developed and applied to business and to the social and life sciences. Topics include matrices, linear programming, probability, and game theory.

MATH 1250 3 cr. 3 hr.
Introduction to Functions
This course provides a study of mathematical functions, graphing techniques, and applications. The functions included are linear, quadratic, polynomial, rational, exponential, and logarithmic. (Credit will not be awarded for both MATH 1250 and MATH 1300.)

MATH 1300 3 cr. 3 hr.
Precalculus
This course prepares students for the study of calculus. Topics include: the real numbers, equations and inequalities, analytic geometry, and polynomial, trigonometric, exponential, and logarithmic functions.
(Credit will not be awarded for both MATH 1250 and MATH 1300.)

MATH 1400 3 cr. 3 hr.
Mathematics Across the Curriculum
Introduces students to a variety of topics in applied mathematics including poluation modeling, measurement, growth and form, social decision making, and graph theory. Required for Elementary Education majors.

MATH 1700 3 cr. 3 hr.
Applied Statistics I
Methods of data collection, organization and interpretation, sampling, probability, estimation, and testing are applied to areas including biology, business, medicine, economics, and education. (Credit will not be awarded for both MATH 1700 and MATH 1800)

MATH 1800 3 cr. 3 hr.
Business Statistics
Topics include: descriptive methods, probability distributions, estimation, testing, analysis of variance, and regression analysis.
Prerequisite: MATH 1250 or MATH 1300. (Credit will not be awarded for both MATH 1700 and MATH 1800.)

***MATH 2000 3 cr. 3 hr.**
Informal Geometry
An intuitive study of basic geometric objects and concepts. Topics studied vary, but are chosen for their intuitive appeal as well as their geometric significance.

MATH 2200 3 cr. 3 hr.
Calculus for Business
A survey of methods and applications of the calculus for functions of one variable that are useful in business and economics. Topics include differentiation with applications to rates and maximum and minimum values, integration techniques with applications to areas, cost, and rates.
Prerequisite: MATH 1250 or MATH 1300. (Credit will not be awarded for both MATH 2200 and MATH 2300.)

MATH 2300 **3 cr. 3 hr.**
Calculus I
The derivative of a function, methods of differentiation, and applications are studied.
Prerequisite: MATH 1300 or its equivalent. (Credit will not be awarded for both MATH 2200 and MATH 2300.)

MATH 2400 **3 cr. 3 hr.**
Calculus II
The Riemann Integral, methods of integration, and applications are studied.
Prerequisite: MATH 2300 or its equivalent.

MATH 2500 **3 cr. 3 hr.**
Introduction to Mathematical Thought
Intended to introduce mathematics as the science of reasoning. Topics include elementary set theory, logic, techniques of proof, basic properties of the real number system, mathematical induction, and axiomatic systems.
Prerequisite: MATH 1300 or its equivalent.

MATH 2600 **3 cr. 3 hr.**
Linear Algebra
Topics include vector spaces, linear transformations and matrices, with applications.
Prerequisite: MATH 2300.

***MATH 2700** **3 cr. 3 hr.**
Applied Statistics II
A continuation of MATH 1700. Topics include: estimation and testing, simple linear and multiple regression, analysis of variance, and nonparametric methods.
Prerequisite: MATH 1700 or MATH 1800.

MATH 2830 **3 cr. 3 hr.**
Methods and Materials in Elementary Mathematics (Math Concepts)
Topics from arithmetic, algebra, and geometry of the modern elementary school mathematics programs are studied. Attention is given to the structural and discovery approach.

MATH 2860 **3 cr.**
Introduction to Secondary School Teaching
This course is required of all students entering a provisional certification program at the secondary level. It is a sophomore level course for full-time undergraduates and the first course taken by transfer and certification-only students. Students will become familiar with the complexities of secondary school teaching and its demands. The course will give faculty the opportunity to screen students and give students the opportunity to test their commitment to teaching. This course includes a pre-practicum requirement and is a prerequisite for other certification course requirements.

MATH 3000 **3 cr. 3 hr.**
Geometry I
A formal study of basic concepts in geometry and the foundations of Euclidean geometry. This course is for mathematics majors or minors and students with a mathematics specialization; all others need permission from the Instructor.
Prerequisites: MATH 2400, 2600.

MATH 3100 **3 cr. 3 hr.**
Discrete Algebraic Structures
A study of discrete algebraic structures of interest in computer science. Topics include: partial orders, Boolean algebra, graph theory and finite state machines.
Prerequisite: MATH 2600.

MATH 3150 **3 cr. 3 hr.**
Elementary Number Theory
Properties of the integers are studied. Topics include: divisibility, prime numbers, congruencies, Diophantine equations and mathematical induction.
Prerequisite: MATH 2500.

MATH 3200 **3 cr. 3 hr.**
History of Mathematics
The development of mathematical ideas and methods from ancient to modern times and their relevance to other fields of knowledge will be studied. This course is intended for mathematics majors, mathematics minors, or mathematics specialists.
Prerequisite: MATH 2400.

MATH 3300 **3 cr. 3 hr.**
Calculus III
Conic sections, indeterminate forms, Taylor polynomials, infinite and power series, differentials and multiple integrals are studied.
Prerequisite: MATH 2400.

MATH 3400 **3 cr. 3 hr.**
Calculus IV
The calculus of polar coordinates, parametric curves, vector valued functions, quadratic surfaces, and directional derivatives are studied. Double integrals in polar coordinates, line integrals, and differential equations may also be considered.
Prerequisite: MATH 3300.

MATH 3550 **3 cr. 3 hr.**
Ordinary Differential Equations
Linear first and second order differential equations, methods of solution, and applications are studied. Series solutions and higher order linear equations are considered.
Prerequisites: MATH 2600 and 3300.

***MATH 3600** **3 cr. 3 hr.**
Introduction to Mathematical Logic
An elementary introduction to classical and symbolic logic, including standard sentential and first order predicate calculi.
Prerequisite: MATH 2500 or MATH 2300.

MATH 3900 **1 cr. 1.5 hr.**
Mathematics Seminar
Problem solving and research on one or more topics outside the core curriculum areas.

***MATH 4000** **3 cr. 3 hr.**
Real Variable Theory
Rigorous treatment of the foundations of differential and integral calculus with such topics as the real numbers, continuity, metric, and Euclidean spaces.
Prerequisites: MATH 2600 and MATH 3300.

***MATH 4050** **3 cr. 3 hr.**
Topology
Topics include point sets, metric spaces, topological spaces, connectedness, and compactness.

MATH 4150 **3 cr. 3 hr.**
Advanced Multivariate Calculus
The differential and integral calculus of vector valued functions and functions of several variables.
Prerequisite: MATH 3400.

MATH 4200 **3 cr. 3 hr.**
Probability and Statistics I
A careful development of elementary probability theory with applications is followed by the study of discrete and continuous random variables including the binomial, Poisson, and normal.
Prerequisite: MATH 3300.

MATH 4250 **3 cr. 3 hr.**
Probability and Statistics II
Random variables and their probability distributions are used to study problems in estimation, hypothesis testing, regression, and analysis of variance.
Prerequisite: MATH 3250.

MATH 4300 **3 cr. 3 hr.**
Abstract Algebra I
A study of algebraic structures including groups, rings, and fields.
Prerequisites: MATH 2500 or consent of Instructor, and MATH 2600.

MATH 4350 **3 cr. 3 hr.**
Complex Analysis
Topics include: the complex number system, the analysis of complex functions, analytic functions, integration, series, contour integration, and conformal mappings.
Prerequisite: MATH 3300.

MATH 4400 **3 cr. 3 hr.**
Operations Research
Topics include: linear programming, duality, networks, transportation problems, dynamic programming, and stochastic models.
Prerequisites: MATH 2600 and MATH 3300.

MATH 4450 **3 cr., 3 hr.**
Mathematical Modeling
Deterministic and probabilistic models from the physical, social ,and life sciences will be studied. The course will emphasize the uses of mathematics, rather than the acquisition of new mathematical knowledge. New mathematical ideas are introduced only when they aid in the study of a particular application.
Prerequisites: MATH 2400, 2600.

MATH 4500 **3 cr. 3 hr.**
Numerical Analysis
Numerical analysis is concerned with devising algorithms for approximating the solutions to mathematically expressed problems. Topics will be chosen from: round off error and computer arithmetic, solutions of algebraic and transcendental equations, interpolation and polynomial approximation, numerical differentia-

tion and integration, solutions of ordinary differential equations, solutions of linear systems and approximation theory. Both mathematical rigor and computer solutions will be stressed.
Prerequisites: MATH 2600, 3300, programming ability in a numerical program language (e.g. FORTRAN, PASCAL).

MATH 4850 3 cr. 3 hr.
Methods and Materials in Secondary Mathematics
Curriculum and pedagogy of secondary school mathematics are studied. The course includes a 30 hour prepracticum of professional experiences.
Prerequisites: MATH 2400 and 2600.

MATH 4860 6 cr.
Mathematics Practicum in a Secondary School
Students are assigned to cooperating schools for one-half semester of student teaching.
Prerequisite: Permission of the department.

MATH 4900 1, 2, 3 cr.
Independent Study
Prerequisite: Permission of department.

MATH 5000 3 cr. 3 hr.
Topics in Mathematics
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.
Prerequisite: Permission of the department.

Medical Technology

Program Director: Assist. Professors:
Wanda Roguski *Elizabeth Szymczak*

Professor: Instructor:
Rose Marie Neunherz *Mary Zschokke*

Associate Professors:
Dorothy Boisvert
Wanda Roguski

The medical technology program, leading to a B.S. in Medical Technology, offers students a challenging and interesting mix of both academic and applied courses. Students develop skills in the basic sciences that serve as the foundation upon which their clinical courses are built. During the first three years, students are introduced to the profession of clinical laboratory science and the clinical courses necessary to practice in the profession. Skills are developed in well equipped, modern laboratories similar to those found in both hospital and industrial settings. During senior year, students take advanced courses in clinical laboratory science.

Liability insurance is required of all students enrolled in field-based or clinical courses, courses with practicum experiences, or courses otherwise deemed by the respective academic programs

In order to remain in the program, students must maintain an overall cumulative average of 2.5 in the sciences as well as in each senior year clinical course.

Upon completion of the program, students find themselves well prepared to obtain positions in hospital, research, industrial, zoological, and private laboratories as well as to become sales and technical representatives for a variety of industrial corporations. In addition, they are eligible to take certification exams given by the National Certification Agency for Medical Laboratory Personnel and other national agencies. The program is fully accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association.

The Major in Medical Technology

All students in the M.T. program are required to take the following courses:

Biology

BIOL 2420 Human Physiology
BIOL 2800 Genetics
BIOL 3450 Biochemistry
BIOL 3900 Microbiology
BIOL 4810 Immunology

Chemistry

CHEM 1300, 1400 General Chemistry I, II
CHEM 2000, 2100 Organic Chemistry I, II
CHEM 3500 Analytical Chemistry II

Math

MATH 1700 Applied Statistics

Medical Technology

MEDT 1000 Introduction to Medical Technology
MEDT 1200 Medical Terminology
MEDT 1400 Clinical Laboratory Techniques
MEDT 2000 Basic Hematology
MEDT 3000 Professional Issues
MEDT 3200 Immunoassay/Clinical Virology
MEDT 3400 Parasitology/Mycology
MEDT 3600 Clinical Laboratory Data Analysis
MEDT 4000 Clinical Hematology
MEDT 4200 Clinical Chemistry
MEDT 4400 Clinical Microbiology
MEDT 4600 Immunohematology
MEDT 4800, 4850 Clinical Correlations I, II

Psychology

PSY 2640 Performance Appraisal and Development

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

MEDT 1000 1 cr. 2 hr.
Introduction to Medical Technology
Integrated lecture-laboratory course designed to acquaint the student with the role of the medical technologist, the duties of technologists, employment opportunities, and educational requirements for the profession. Laboratory includes: introduction to techniques in hematology, clinical chemistry, immunohematology and clinical microbiology. 2 hrs. lecture/lab per week plus additional hours for independent project.

MEDT 1200 1 cr. 1 hr.
Medical Terminology
Instructs students to interpret and define medical words by combining prefixes, suffixes, and root words.

MEDT 1400 3 cr. 5 hr.
Clinical Laboratory Techniques
Includes study of clinical laboratory's role in assessing the kidney in health and disease, microscopic and chemical analysis of urine taught with emphasis on correlation of test data to disease diagnosis. Techniques and theory of phlebotomy studied.
Prerequisite: BIOL 2420 or the permission of Instructor.

MEDT 2000 3 cr. 5 hr.
Basic Hematology
Composition, formation, and function of blood and blood cells will be explored; routine and special hematology testing methodologies, coagulation principles and procedures will be discussed.
Prerequisite: BIOL 2420 or permission of Instructor.

MEDT 3000 3 cr. 3 hr.
Professional Issues in Clinical Laboratory Science
Economic, political, and social issues pertinent to health care delivery. Professional and personal ethics, interpersonal communication skills, interview techniques, career options for medical technologists, basic education, and management strategies.
Prerequisite: MEDT 1000.

MEDT 3200 3 cr. 5 hr.
Immunoassay/Clinical Virology
Study of in vitro antigen-antibody reactions, theory of serological reactions, and practical application of theory to clinical laboratory testing, enzyme assays, immunoelectrophoresis, agglutination and precipitation tests studied and performed; overview of viral structure, oncogenesis, and viral infections of man.
Prerequisite: BIOL 3900.

MEDT 3400 3cr. 4 hr.
Parasitology/Mycology
Life cycles, identification, and clinical pathology of parasites in man; common mycotic infections of man and methods of identification.
Prerequisite: BIOL 3900.

MEDT 3600 3 cr. 3 hr.
Clinical Laboratory Data Analysis
Application of mathematical manipulations involved in the methodology, quality control, method evaluation, and pathophysiological correlations of the clinical laboratory.
Prerequisite: MATH 1700.

MEDT 4000 **6 cr. 9 hr.**
Clinical Hematology
Biology of human blood cells and hemostatic mechanisms. Laboratory tests useful in the detection and differential diagnosis of hematologic diseases performed.
Prerequisite: MEDT 2000. Open to senior medical technology majors only or permission of Instructor.

MEDT 4200 **8 cr. 11 hr.**
Clinical Chemistry
Principles and techniques employed in clinical laboratories, preparation of solutions, and care of equipment. Diagnostic tests performed on all body fluids utilizing manual and instrumental techniques. Theory of disease and interpretation of data stressed.
Prerequisites: CHEM 2100, 3500, MEDT 3600. Open to senior medical technology majors only or permission of Instructor.

MEDT 4400 **6 cr. 9 hr.**
Clinical Microbiology
Isolation, identification, and propagation of pathogenic organisms; Bacteria and their clinical significance to man emphasized.
Prerequisites: BIOL 3900, MEDT 3400. Open to senior medical technology majors only or permission of Instructor.

MEDT 4600 **4 cr. 7 hr.**
Immunohematology
Theory and laboratory techniques in blood banking; common blood types, screening and preparation of donors, crossmatching, antigen-antibody reactions, and serological procedures.
Prerequisites: BIOL 2800, 4810. Open to senior medical technology majors only or permission of Instructor.

MEDT 4800, 4850 **1 cr. 2 hr.**
Clinical Correlations I & II
Two semester seminar designed to demonstrate the interrelationships between clinical laboratory disciplines; case study approach utilized to help student integrate laboratory information.
Corerequisites: MEDT 4000, 4200, 4400, 4600. Open to senior medical technology majors only or permission of Instructor. S/U grading only.

MEDT 4901, 2, 3 **1, 2, 3 cr.**
Independent Study
Open to students who have permission of supervising Instructor and department. Course of study, meetings, and project presentation by arrangement.

MEDT 4940
Internship

***MEDT 5000** **3 cr. 3 hr.**
Topics in Medicine
Courses have a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Military Science

Professor:
LTC Steven R. Lindberg

FSC Officer-in-Charge:
Maj. Peter Lamoges

Introduction

The U.S. Army Reserve Officers' Training Corps program is offered by Fitchburg State College. The purpose of the program is to prepare top quality men and women to become commissioned officers in the U.S. Army, Army Reserve, or Army National Guard. Military Science is designed to complement other instruction offered by Fitchburg State and is integrated into the student's regular academic curriculum. The department offers numerous scholarship opportunities based solely on merit rather than financial need or lack thereof.

Special Information

The Reserve Officer Training program is based on a four year curriculum composed of a two year Basic Course (freshman and sophomore years) and a two year Advanced Course (junior and senior years). Students incur no obligation to the Army for participation in the Basic Course. A number of options are offered to meet the special needs of individual students and to provide flexibility within the program:

1. The traditional 4 year program during which the student would take MS courses during the academic year and attend one advanced summer camp between the third and fourth years.

2. The 2 year program is designed especially for transfer students from non-ROTC schools, prior military service (National Guard, Army Reserve or Active Army), or those who did not complete all of the Basic Course requirements. In this case, qualified students attend a basic summer camp prior to their third year and then continue through their last two years as any other 4 year ROTC student.

3. The third variation consists of a compressed program for students who feel they can complete their academic studies in three years. The recommended compression is to take both the first and second year military science subjects in one year but other arrangements can be made.

No military obligation is incurred for Basic Course subjects. Students contracted into the Advanced Course or who have a scholarship do incur an obligation which may be satisfied through service in the Active Army, National Guard or Army Reserve. Academic courses outside the regular military science curriculum are designed to provide each cadet with the type of academic foundation necessary to support continued intellectual growth. Requirements individuals must meet to satisfy professional military education requirements (PME) are the baccalaureate degree and completion of at least one undergraduate course from each of the following designated fields of study:

written communication
human behavior (PSY 1100)
military history (HIST 4310, 4320; HIST 4030, 3400)
math reasoning (MATH 0200)
computer literacy (CSC 1000)

The Professor of Military Science will determine which college courses, in addition to the above recommendations, will satisfy PME requirements. Written communication is satisfied by military science classes.

Basic Course

The Basic Course includes the military science subjects taught during the first and second years. It introduces the student to the Army and the Army to the student. Since all effective leaders must understand the organization in which they will function, initial instruction is intended to create a working knowledge of ROTC and the Army. Basic Course offers FSC students the opportunity to learn about the U.S. Army and how it fits into society. The Basic Course is open to any FSC student with no military obligation being incurred. Several field trips are planned during each course.

Advanced Course

The Advanced Course, taught during the third and fourth years, includes topics such as management theory, personnel counseling, ethics, professionalism and professional development, written and verbal communications, military law, law of war, and studies in military areas such as tactics. The objectives are to develop leaders, to give the student experience in organizing and then managing a project, to enable the student to take charge of any project and bring it to a successful conclusion. This acquired ability is useful in every human endeavor; it is essential to the military leader. In conjunction with the theoretical approach to leadership studied in class, students are required to apply their knowledge by participating in a weekly Leadership Laboratory. The Advanced Course is open to all students who have satisfactorily completed two years in the Basic Course or the equivalent.

A student enrolled in the Advanced Course receives an allowance of $100 a month, tax free, from the date of enrollment. To enroll in the Advanced Course, students must execute a contract stating they will complete the program of instruction and accept a commission as a second lieutenant in the U.S. Army upon graduation and serve in the National Guard, Army Reserve, or on active duty.

Leadership Laboratory

The purpose of Leadership Laboratory is to give each cadet the opportunity to apply practically the theory learned during formal class periods. The senior cadets conduct the arbitrary period with under classmen filling subordinate roles, their degree of

responsibility dependent on how far they have advanced in ROTC.

The Military Science Department encourages its cadets to participate in athletics and to join other extra-curricular activities in order to practice leadership theories learned in Military Science.

Course Offerings

MILS 1400 **1 cr. 1 hr.**
Introduction to Army ROTC
An introduction to the Army ROTC program. Its history, purpose, structure, and method will be discussed. Leadership Management responsibilities of an officer are presented. Emphasis will be placed on ROTC and its relationship with the United States Army.

MILS 1500 **1 cr. 1 hr.**
Introduction to the United States Army
An overview of the role of the "Total Army" within the framework of the national defense establishment. The integrated roles of the Active Army and the Reserve Components are examined. Emphasis is placed on the duties and responsibilities of the officer serving in the combat arms, combat support, and combat service support branches.

MILS 2000 **2 cr. 2 hr.**
Land Navigation and Communications
Students learn the basic fundamentals necessary to navigate and communicate. In Land Navigation, students identify terrain features, find locations, determine directions, and plan routes. Maps, protractors, compasses, terrain boards, and audio-visual aids are utilized extensively. In the communications portion of this course, students learn radio-telephone procedures and how to communicate. Principles and techniques derived from this course have application to many other studies.

MILS 2200 **2 cr. 2 hr.**
Emergency Medical Treatment/ Basic Tactics
The first half of the course presents casualty evaluation, treatment, and evacuation under emergency conditions. Injury prevention under different climatic conditions is stressed. Cardiopulmonary Resuscitation (CPR) Technique is addressed. The second half of the course familiarizes the students with individual, buddy team, and squad tactics. These basic fundamentals are reinforced and built upon throughout the student's tenure in the Army ROTC program.

MILS 3100 **2 cr. 2 hr.**
Advanced Theory of Unit
A continuing study of effective leadership in tactical operations, culminating the lessons learned during previous courses; examination of the theory and dynamics of the military team and its effective employment as part of the combined arms concept.
Prerequisite: Completion of Basic Course or advanced placement credit granted by the Professor of Military Science.

MILS 3300 **2 cr. 2 hr.**
Leadership
A study of the psychology of leadership based on an organizational model. Emphasis is placed on individual, group, transactional and organizational factors that both a leader and manager need to consider in order to be maximally effective. The student is provided with the essentials for forming a creative, personal management and leadership philosophy for practical application in a real world setting.
Prerequisites: Completion of Basic Course or advanced placement credit granted by the Professor of Military Science.

MILS 4200 **3 cr. 3 hr.**
Effective Communication
Designed to enhance the communication skills of the army officer. Emphasis is on the Army writing style, conducting briefings, and the Army Training management system. Effective speaking, listening, writing and military correspondence, and an emphasis on the interrelationship of staff and command assignments in the effective utilization of people and resources.
Prerequisite: Completion of Basic Course or advanced placement credit granted by the Professor of Military Science.

MILS 4300 **3 cr. 3 hr.**
Law, Ethics, and Preprofessional Seminar
This course provides the student with an introduction to Military Law and Military Professional Ethics. The role of the junior officer with regard to military law in the practical setting of his/her initial assignment in an Army unit is examined. This course provides the Advanced Course cadet with a basic knowledge of the Army's organizational practices and philosophy. The role of the noncommissioned officer is reviewed along with the basics of line and staff functions. An overview of the Army's personnel management, training, and logistics systems, along with post and installation support organization and functions are presented as a Basic Course. *Prerequisite: Completion of Basic Course or advanced placement credit granted by the Professor of Military Science.*

Music

Chairperson: *Harry Semerjian*

Asst. Professor: *Robin Dinda* *Jane Fiske*

Professors: *Frank Patterson* *Harry Semerjian*

The Minor in Music

The minor in Music will require 18 semester hours. Students must take the following:

Art of Music	
Commonwealth of the Arts	
Basic Music Theory	
Harmony I	
Choral Arts	3 cr.
or Instrumental Arts	3 cr.

The remaining 6 semester hours may be taken from approved music electives. All education majors selecting the music minor must elect Music in Elementary Education. All minor candidates must pass a first year piano examination or complete a semester of class piano.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

MUSC 1000 **3 cr. 3 hr.**
Art of Music
A study of music as an aesthetic experience. Representative styles and categories from the Middle Ages to the present. Students are required to attend professional concerts. C

MUSC 2000 **3 cr. 3 hr.**
Commonwealth of the Arts
Music's reflection of the values and ideals of societies past and present. Inter relationships between the fine arts. C, IDIS

MUSC 2200 **3 cr. 3 hr.**
Basic Music Theory
Rhythmic notation including meters and tempo. Melodic notation, including intervals, scales, and keys. Dynamics, an introduction to key relationship, transpositions, as well as other selected topics.

MUSC 2300 **3 cr. 3 hr.**
Music Through the Compositional Approach
Students will encounter music through a series of creative projects in varied musical forms. Students must have ready use of a tape recorder and their own tapes.
Prerequisite: MUSC 2200.

MUSC 3100 **3 cr. 3 hr.**
Symphony
Structural and stylistic characteristics of the symphony from the 18th century to the present.
Prerequisite: MUSC 1000 or MUSC 2200.

MUSC 3200 **3 cr. 3 hr.**
Opera
Several works from the standard operatic repertoire. Some significant trends in modern opera.
Prerequisite: MUSC 1000 or MUSC 2200.

***MUSC 3300** **3 cr. 3 hr.**
Chamber Music
A survey of music written for small ensembles.
Prerequisite: MUSC 1000 or MUSC 2200.

MUSC 3400 **3 cr. 3 hr.**
Twentieth-Century Music
The idioms and aesthetic notions of the present century, together with their relationship to the past.
Prerequisite: MUSC 1000 or MUSC 2200.

MUSC 3500 **3 cr. 3 hr.**
American Music
American music from colonial times, with some emphasis upon "popular" and "Art" music of the present century in the U.S.

MUSC 3600 **3 cr. 3 hr.**
Baroque and Classical Music
Monteverdi to Beethoven. Opera, oratorio, passion, cantata, sonata forms, dance forms, and shifting aesthetic views.
Prerequisite: MUSC 1000 or MUSC 2200.

MUSC 3700 **3 cr. 3 hr.**
Romantic Music
A survey of major forms of 19th century music from Beethoven to Mahler.
Prerequisite: MUSC 1000 or MUSC 2200.

MUSC 3800 **3 cr. 3 hr.**
History of Jazz
This course will introduce students to the history of jazz and investigate the musical elements that make up jazz. The role of jazz in American history will be explored as well as a tracing of the various musical trends that contributed to jazz.

MUSC 4000 **1 cr. 2 hr.**
Choral Arts
Singing choral music past and present, including dramatic music. No more than 6 semester hours applicable toward graduation. (See MUSC 4100.)

MUSC 4100 **1 cr. 2 hr.**
Instrumental Arts
Small and large ensemble playing of representative works for instruments including band and jazz ensemble literature. No more than 6 semester hours of MUSC 4100 or any combination of MUSC 4100 and MUSC 4000 applicable toward graduation.

MUSC 4200 **1 cr. 2 hr.**
Class Piano
Practical keyboard usages in classroom work: accompaniment, simple transposition, harmonization of melodies at the keyboard.

MUSC 4300 **1 cr. 2 hr.**
Class Voice
Principles of voice production. Breath control, phrasing, resonance, and diction are stressed.

***MUSC 4400** **3 cr. 3 hr.**
Song
Popular, folk, and art songs of many nations.
Prerequisite: MUSC 1000 or MUSC 2200.

MUSC 4500 **3 cr. 3 hr.**
Harmony I
Harmonizations of simple melodies. Principles of modulation and key relationships.
Prerequisite: MUSC 2200.

***MUSC 4510 3 cr. 3 hr.**
Harmony II
Further work in modulation. Chromaticism. 19th and early 20th century developments.
Prerequisite: MUSC 4500 or equivalent.

***MUSC 4700** **3 cr. 3 hr.**
Compositional Techniques
Working with small musical forms. Traditional devices like sequence, ostinato, and motivic development. Freer forms.
Prerequisite: MUSC 4500.

***MUSC 4710** **3 cr. 3 hr.**
Musical Production
Workshop approach to producing and rehearsing opera, operetta musical comedy.
Prerequisites: MUSC 2200, MUSC 4500.

MUSC 4800 **3 cr. 4 hr.**
Music in Elementary Education
The objectives and techniques of teaching music in the first six grades.
Prerequisites: MUSC 2200, MUSC 4200.

MUSC 4901 **1 cr. 1 hr.**
Independent Study in Music

MUSC 4902 **2 cr. 2 hr.**
Independent Study in Music

MUSC 4903 **3 cr. 3 hr.**
Independent Study in Music

MUSC 4940 **3 cr. 3 hr.**
Internship in Music

MUSC 5000 **3 cr. 3 hr.**
Topics in Music
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Nursing

Chairperson:
Andrea Wallen

Professors:
Sheila Fredette
Carol Gilbert
Barbara Madden
Andrea Wallen

Assoc. Professors:
Elizabeth Fisk
Sophia Harrell
Catherine Humphreys
Barbara May
Elizabeth May
Tanya Ratney
Rowena Taylor
A. Lynne Wagner
Jean Worfolk

Asst. Professors:
Barbara Cammuso
Mildred Marion
Linda McKay
Carol Picard
Elizabeth Shaw
Richard Trifilo

Instructors:
Sandra Austin
Anne Marie Catalano
Joanne Chapman
Rita Florio

Part-Time Instructors:
Michele Brady
Tara Mariolis
Jean Kressy
Gail Liston
Judith Mizhir
Katherine Niles-Joyal
Barbara Powers

Introduction

As the first department of nursing in the State College System, the nursing program has a long and proud history. It is fully approved by the Board of Registration in Nursing and fully accredited by the National League for Nursing through its Council of Baccalaureate and Higher Degree Programs. It supports both a chapter of Sigma Theta Tau, the International Nursing Honor Society, and a chapter of the National Student Nurses Association. It provides not only newly-renovated laboratories for on-campus practice of clinical skills with computer and audiovisual support, but also a wide variety of client care opportunities in affiliated health care agencies. Its graduates are in great demand in the professional job market, and many have progressed to leadership positions in practice, administration, research, and education.

Purpose

The purpose of the Fitchburg State College program in nursing is to prepare practitioners of professional nursing who can assume responsibility for planning and providing health care to individuals, families, and groups in a variety of settings in collaboration with other professionals and who have the foundation for graduate study in nursing.

Admissions and Retention

The majority of departmental admissions are freshmen selected from qualified high school graduates. The Department also admits transfer students who are not licensed nurses who meet the prerequisites for the sophomore year courses, as well as registered nurses who meet the prerequisites of the alternative junior year. The department uses individual academic and personal advising by nursing faculty, referrals to campus services, and internal departmental resources to provide majors with assistance to meet the progression requirements and achieve success in the program. A planned five-year sequence of courses for students who need or wish to decelerate their progress is available.

The Major in Nursing

The degree offered is the Bachelor of Science with a major in nursing. Graduation requires a minimum of 124 semester hours of credit comprised of 64 credit hours of nursing, 38 hours of required and 22 hours of elective liberal arts and sciences credits. Each semester of nursing after the pre-nursing freshman year includes a clinical/ laboratory component as well as classroom theory. A variety of inpatient and community agencies in central and eastern Massachusetts offer practice opportunities to assist students toward professional competency.

Registered nurses are provided with a variety of opportunities to achieve advanced placement in liberal arts and science courses and in nursing via the CLEP program, College examinations, Nursing Mobility Profile II examinations, and a Portfolio Review Process.

All senior students in their final experience select, with advisement, an area of nursing practice for concentrated study in accordance with individualized learning objectives.

Part-time study is available to majors in lower division course work and to registered nurse students.

No minors are offered in the Department of Nursing. Within the planned progression sequence, it is not feasible for nursing majors to elect a minor in another department.

Special Information

As a professional preparation program, successful progress in the major necessitates requirements in addition to those common to all College students. These include: All nursing majors 1) must achieve a 2.00 or better in all required nursing courses. Students may repeat a failed nursing course one time. Failure to achieve a 2.00 when a course is repeated will result in disenrollment from the major. The repeat policy may be used one time during the course of study. 2) Students are responsible for providing their own transportation to clinical practice sites. 3) Annually prior to participation in any clinical nursing course, students must present evidence to the Department of Nursing of: liability insurance coverage at the required level, CPR certification/ recertification, immunizations, and Massachusetts nursing licensure (if applicable). Commonwealth of Massachusetts regulations regarding health records for students enrolled in the health sciences must be met through the campus Health Service office. 4) It may be necessary for students to take a portion of their clinical in the summer.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

NURS 1010 **1 cr. 1 hr.**
Introduction to Nursing
This course examines the role of professional nurses within the health care system. The nurse as a promoter of health and differing views of health and illness are also explored.
Prerequisite: none, open to any major.

NURS 2000 **2 cr. 2 hr.**
Scientific Foundations for Nursing—Interventions I
This is the first course in a two-semester sequence. Selected basic alterations in health and physiology underlying nursing assessment, diagnosis, and intervention are discussed.
Prerequisites: BIOL 1200 and 1300, CHEM 1200.

NURS 2100 **2 cr. 2 hr.**
Scientific Foundations for Nursing—Interventions II
This is the second course in a two-semester sequence. Selected basic alterations in health and physiology underlying nursing assessment, diagnosis, and intervention are discussed.
Prerequisite: NURS 2000.

NURS 2200 **2 cr. 2 hr.**
Nutritional Foundations for Nursing Interventions
This course examines concepts from nutrition science and their application to self-care and client care. The collaborative role of nurse and dietitian is also explored.
Prerequisites: BIOL 1200 and 1300, CHEM 1200 or permission of Instructor.

NURS 2340 IDIS, C **3 cr. 3 hr.**
Contemporary Issues in Women's Health
This elective course will consider issues in women's health from socialization in infancy through the powerlessness and isolation of old age. Emphasis will be placed on understanding women's unique health problems and societal forces that shape health perceptions and care of women. Health promotion will be stressed, and ways in which women may assume control of their health management will be explored.
If minoring in Women's Studies, see advisor for course sequencing.

NURS 2700 **5 cr. 9 hr.**
Nursing Process with the Well Client I
This is the first course in a two-semester sequence. The content deals with theoretical and methodological nursing concepts for practice with well clients. Practice opportunities are offered in psychomotor skills and either physical assessment, support of the healthy developing family in the community, or maternity/newborn in-patient care.
Prerequisites: ENGL 1200, PSY 1100, SOC 1100, BIOL 1200 and 1300, CHEM 1200. Pre or corequisites: NURS 1010, NURS 2000, NURS 2200, PSY 2200.

NURS 2800 **5 cr. 9 hr.**
Nursing Process with the Well Client II
This is the second course in a two-semester sequence. The content deals with theoretical and methodological nursing concepts for practice with well clients. Practice opportunities are

offered in psychomotor skills and either physical assessment, support of the healthy developing family in the community, or maternity/newborn inpatient care.
Prerequisites: NURS 2000, NURS 2200, NURS 2700, PSY 2200. Pre or corequisite: BIOL 2700, NURS 2100.

NURS 2910 **4 cr. 4 hr.**
Nursing Care of the Child Bearing Family
This course for Registered Nurse students examines current concepts and nursing interventions for the care of prenatal, intrapartal, and postpartal women and neonatis. (exempt by exam).
Prerequisites: ENGL 1200, BIOL 1200 and 1300, BIOL 2700, CHEM 1200, PSY 2200, SOC 1100.

NURS 3100 **2 cr. 2 hr.**
Pharmacological Basis for Nursing Interventions
This course deals with principles of pharmacology needed for professional nursing practice. Interrelationships between drug action, disease process, and client are the basis for exploring therapeutic effectiveness. Selected drug classifications and prototypes are used to structure content. Legal constraints and ethical issues are explored.
Prerequisites: NURS 2800, NURS 2100, BIOL 2700 or permission of the Instructor.

NURS 3500 **6 cr. 8 hr.**
Concepts of Nursing I
This is the first course in a two-semester sequence for the Registered Nurse student. Selected concepts and historical perspectives underlying professional nursing practice are explored. Health Assessment and other selected laboratory and field experiences are offered.
Prerequisites: Nursing Mobility Profile II, ENGL 1200, BIOL 1200 and 1300, BIOL 2700, CHEM 1200, PSY 2200, SOC 1100.

NURS 3600 **6 cr. 8 hr.**
Concepts of Nursing II
This is the second course in a two-semester sequence for the Registered Nurse student. Selected concepts and historical perspectives underlying professional nursing practice are explored. Health Assessment and other selected laboratory and field experiences are offered.
Prerequisites: NURS 2100, NURS 2200, NURS 2910, NURS 3100, NURS 3500, NURS 3910, NURS 3920, NURS 3930.

NURS 3700 **10 cr. 18 hr.**
Nursing Process with Clients Experiencing Health Alterations I
This is the first course in a two-semester sequence. Critical thinking skills are developed through application of the nursing process to clients with common health problems. Practice opportunities are offered in selected acute care facilities.
Prerequisites: NURS 2800, NURS 2100, BIOL 2700, and Basic Math Competency Pre or corequisite: NURS 3100.

NURS 3800 **10 cr. 18 hr.**
Nursing Process with Clients Experiencing Health Alterations II
This is the second course in a two-semester sequence. Critical thinking skills are developed through application of the nursing process to clients with common health problems. Practice opportunities are offered in selected acute care facilities.
Prerequisites: NURS 3100, NURS 3700.

NURS 3910 **4 cr. 4 hr.**
Nursing Care of the Mentally Ill Client
This course for Registered Nurse students examines current concepts and nursing measures in the care of clients with selected alterations in mental health. (exempt by exam).
Prerequisites: ENGL 1200, BIOL 1200 and 1300, BIOL 2700, CHEM 1200, PSY 2200, SOC 1100.

NURS 3920 **4 cr. 4 hr.**
Nursing Care of the Child
This course for Registered Nurse students examines current concepts and nursing measures in the care of children from infancy through adolescence. (exempt by exam).
Prerequisites: ENGL 1200, BIOL 1200 and 1300, BIOL 2700, CHEM 1200, PSY 2200, SOC 1100.

NURS 3930 **7 cr. 7 hr.**
Nursing Care of the Adult
This course for Registered Nurse students examines current concepts and nursing measures in the care of adult clients with selected common health problems. (exempt by exam).
Prerequisites: ENGL 1200, BIOL 1200 and 1300, BIOL 2700, CHEM 1200, PSY 2200, SOC 1100.

NURS 4000 **2 cr. 2 hr.**
Nursing Research
This course prepares students as knowledgeable research consumers. Researchable problems in nursing are identified and explored.
Prerequisites: MATH 1700. Prerequisite or corequesite: NURS 3800 or NURS 3600.

***NURS 4100** **2 cr. 2 hr.**
Holistic Health: Alternative Approach to Health Care
This elective course focuses on the integration of mind, body, spirit, and environment. Aspects of modern medical science and valid alternatives, general approaches, and specific modalities are presented.
Prerequisite: NURS 3800 or NURS 3600.

***NURS 4400** **2 cr. 2 hr.**
Holistic Care of the Person with Cancer
This elective course uses the paradigm of a person with cancer to synthesize nursing theory and to examine clients' holistic needs. Concepts from research, nursing, and related sciences are integrated throughout.
Prerequisite: NURS 3800 or NURS 3600.

NURS 4700 **10 cr. 20 hr.**
Nursing Process with Families and Groups in Community Settings
This course focuses on system's concepts as a basis for applying the nursing process with individuals, families, and groups in the community. Primary, secondary, and tertiary prevention is used in a variety of distributive care settings.
Prerequisite: NURS 3700 or NURS 3600.

NURS 4710/4720 **5cr. 10 hr. ea.**
Nursing Process with Families and Groups in Community Settings I and II
These courses are a two-semester sequence for the part-time Registered Nurse student. These courses focus on system's concepts as a basis for applying the nursing process with individuals, families, and groups in the community. Primary, secondary, and tertiary prevention is used in a variety of distributive care settings.
Prerequisite: NURS 3600.

NURS 4800 **10 cr. 26 hr.**
Nursing Process in a Selected Practicum
This capstone course in the nursing curriculum offers opportunities for in-depth exploration of an area of nursing interest. Nursing process with clients experiencing complex health problems, leadership and management principles, and professional issues are integrated into clinical practice. A preceptor model is used to facilitate increased independence in professional practice.
Prerequisites: NURS 4000, NURS 4700, or 4710, 4720.

***NURS 4810/4820** **6 cr. 14 hr. ea.**
Nursing Process in a Selected Practicum I and II
These courses are a two-semester sequence for the part-time Registered Nurse student. These capstone courses in the nursing curriculum offer opportunities for in-depth exploration of an area of nursing interest. Nursing process with clients experiencing complex health problems, leadership and management principles, and professional issues are integrated into prior theoretical foundations. A preceptor model is used to facilitate increased independence in professional practice.
Prerequisites: NURS 4000, NURS 4700, or 4710, 4720.

NURS 4850 **2 cr. 2 hr.**
Leadership and Management Concepts for Nursing Practice
This course examines concepts underlying professional career development in nursing. The roles of the nurse as manager of client care, as part of a health care institution hierarchy, and as a member of a professional collective are explored.

NURS 4901 **1 cr. 1 hr.**
Independent Study

NURS 4902 **2 cr. 3 hr.**
Independent Study

NURS 4903 **3 cr. 3 hr.**

NURS 5000 **3 cr. 3 hr.**
Topics in Nursing
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Philosophy

Chairperson: *Harry Semerjian*

Assoc. Professor: *Ali Errishi*

Professors:
James Colbert
Richard Glidewell
Walter Jeffko

The Minor in Philosophy

The Philosophy Minor requires 15 semester hours. There is a prerequisite of PHIL 1000 or PHIL 1100. Courses for the minor must include a) either PHIL 3310 or PHIL 3320 and PHIL 3330 or 3340; b) at least one course from the following: PHIL 2500, 2550, 2600, 2660, 3600, 4500, and c) two additional philosophy courses.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

PHIL 1000 **3 cr. 3 hr.**
Introduction to Western Philosophy
An introduction to the problems, methods, and goals of classical and contemporary Western Philosophy. Emphasis is placed upon how these differ from and relate to other fields of human knowledge.

PHIL 1100 **3 cr. 3 hr.**
Logic
An introduction to techniques for analyzing the structure and validity or arguments in a natural language such as English, as well as the concepts and principles of validity, with truth-functional and quantification inference, and a procedure in formal systems. IDIS.

PHIL 2000 **3 cr. 3 hr.**
Philosophy of Education
This course seeks to trace the origin and development of major educational theories and their contemporary implications.
Prerequisite: PHIL 1000.

***PHIL 2200** **3 cr. 3 hr.**
Theories of Knowledge
The problems and methods of human knowledge. Theories presented in the light of idealism, realism, pragmatism, and existentialism.
Prerequisite: PHIL 1000.

***PHIL 2300** **3 cr. 3 hr.**
Metaphysics
The attempt to articulate fundamental principles that can explain the nature of reality itself.
Prerequisite: PHIL 1000.

PHIL 2440 and 2450 **3 cr. 3 hr.**
American Philosophy
A study of American thought from the Colonial Period to the present.

PHIL 2500 **3 cr. 3 hr.**
Contemporary Ethical Problems
Application of ethical thinking to some of today's major social and personal issues including crime and punishment, civil disobedience, prejudice and discrimination, sex, abortion, war, and suicide and death.

PHIL 2550 **3 cr. 3 hr.**
Contemporary Ethical Systems
Moral experience and reflective ethics; survey and critical evaluation of major ethical theories; ethics and science.

PHIL 2600 **3 cr. 3 hr.**
Philosophy of Man
An exploration of human nature or personhood from the triple perspectives of philosophy, religion, and behavioral science, focusing upon the following thinkers and movements; Plato, Christianity, early modern individualism, Marxism, Freud, existentialism, Frankl's logotherapy, Skinner, Fromm's humanism and personalism. IDIS.

***PHIL 2650** **3 cr. 3 hr.**
Man and Nature I
This course is based, in part, on the Ascent of Man film series by Jacob Bronowski. It covers a broad range of topics centering on those discoveries, ideas, and events which have been crucial to the development of modern civilization. The origin of man, ancient civilizations, early mathematics and astronomy are among the topics covered.

***PHIL 2660** **3 cr. 3 hr.**
Man and Nature II
A continuation of PHIL 4650 covering the period from the trial of Galileo to the present, dealing with such topics as evolution, nuclear physics, the theory of relativity, and the human brain.

***PHIL 3310** **3 cr. 3 hr.**
Ancient Philosophy
A study of the beginnings of Western Philosophy, including the pre-Socratics, Plato, Aristotle, and several other thinkers of the period.
Prerequisite: PHIL 1000.

***PHIL 3320** **3 cr. 3 hr.**
Medieval Philosophy
Includes St. Augustine, Boethius, Albertus Magnus, Avicenna, Averroes, Maimonides, and St. Thomas, and their influence upon subsequent philosophy.
Prerequisite: PHIL 1000.

***PHIL 3330** **3 cr. 3 hr.**
Modern Philosophy
Trends of modern thought since the Renaissance, including Descartes, Locke, Spinoza, Leibniz, Hume, Kant, and Hegel.
Prerequisite: PHIL 1000.

PHIL 3340 **3 cr. 3 hr.**
Contemporary Philosophy
An examination of some current trends and issues in contemporary American, British, and European philosophy.
Prerequisite: PHIL 1000. IDIS

***PHIL 3600** **3 cr. 3 hr.**
Philosophy of Religion
The God-problem and religious experiences as seen in the classical philosophers and in the philosophies of existentialism and pragmatism.
Prerequisite: PHIL 1000.

***PHIL 3610** **3 cr. 3 hr.**
Comparative Religious Experiences
This course studies the principal religions of mankind; Buddhism, Christianity, Islam, Hinduism, and Judaism; their basic tenets and insights into spiritual values. C

***PHIL 4000** **3 cr. 3 hr.**
Existentialism
Origin of contemporary existentialism; its leading ideas as seen in writings of such philosophers as Kierkegaard, Jaspers, Marcel, Sartre, and Camus.
Prerequisite: PHIL 1000.

PHIL 4100 **3 cr. 3 hr.**
Philosophy of Art
A reflection on the nature of beauty and its embodiment in works of literature and art.
Prerequisite: PHIL 1000.

***PHIL 4200** **3 cr. 3 hr.**
Political and Social Philosophy
The various political and social ideas beginning with Plato and continuing to Marx.
Prerequisite: PHIL 1000.

PHIL 4300 **3 cr. 3 hr.**
Philosophy of Science
An analysis of the methods and goals of the physical sciences, how they differ from the social sciences, and the philosophic problems encountered in scientific pursuits.

***PHIL 4400** **3 cr. 3 hr.**
Philosophy of Language
Study of theories about structure and meaningfulness of language, especially in twentieth century Anglo-American thought.
Prerequisite: PHIL 1000.

***PHIL 4430** **3 cr. 3 hr.**
Marxism
Origins, development, and contemporary application of Marx's thought. An attempt to understand society and history by a philosophy identified with political economy. IDIS.
Prerequisite: PHIL 1000.

PHIL 4500 **3 cr. 3 hr.**
Philosophy of Love
An analysis of the concept "love" as employed in the social and moral philosophies of various classical and contemporary thinkers.

PHIL 4903 **3 cr. 3 hr.**
Independent Study
Open to students who have permission of the supervising instructor and the Department chairperson. Course of study, meetings, and credit by arrangement.

PHIL 5000 **3 cr. 3 hr.**
Topics in Philosophy
Courses having a more narrow focus of those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Physical Education

Chairperson:
Thomas Battinelli

Professors:
Thomas Battinelli
Lee N. Cunningham

Assoc. Professors:
Joyce Downey
James Sheehan
Caryl Sickul

Asst. Professors:
David Antaya
Barbara Nole

The Physical Education Program is designed to foster healthy and physically active student life-styles and to prepare students professionally in program concentrations related to their major areas of study.

Course offerings are divided into three sub-programs: Health and Fitness, General Physical Education, and Professional Preparation.

Health and Fitness is the required/elective academic base of the program. Course offerings generally cover instruction in the areas of health and wellness, and exercise and fitness. The goals of this sub-program are to increase student knowledge, understandings, and competencies in these related fields of study.

General Physical Education is the elective physical activity instructional base of the program. A variety of physical education, recreational, and dance courses are offered. The goals of this sub-program are to provide opportunities for students to participate in activities aimed at the development of physical fitness and performance skills for present as well as future use.

Professional Preparation is the career-oriented base of the program. The physical education concentrations offered supplement those of the major departments in the areas pertinent to the professional preparation of their students. The goals of this sub-program are to provide career alternatives to students related to their chosen fields of endeavor.

Biology/Exercise Science Track

Exercise Science Course Requirements	**(12)**
PHED 3070 Exercise and Sport Science	(3)
PHED 4040 Motor Learning and Physical Performance	(3)
PHED 4120 Biomechanics of Sport	(3)
BIOL 4950 Internship	(3)

Education/Physical Education Minor*

Physical Education Professional Course Requirements	**(12)**
PHED 3070 Exercise and Sport Science	(3)
PHED 4030 Physical Education: An Overview	(3)
PHED 4040 Motor Learning and Physical Performance	(3)
PHED 3080 Scientific Foundations of Athletic Training and Conditioning	(3)
Physical Activity Course Requirements	(6)

*For Education (Elementary and Secondary) and Human Services Majors. Majors in Human Services may substitute Recreational Leadership (PHED 4010) and Camp Counseling (PHED 4020) in place of Motor Learning and Physical Performance and Scientific Foundations of Athletic Training and Conditioning.

Human Services/Recreation/Dance Specializations

Specialization I Recreation 16 cr.

Professional Course Requirements	**(12)**
PHED 4060 Outdoor Education	(3)
PHED 4110 Programs in Recreation	(3)
PHED 4010 Recreational Leadership	(3)
Recreational Management (proposed)	(3)

Physical Activity Course Requirements	**(4)**
PHED 1280 Orienteering	(1)
PHED 1180 Backpacking	(1)
PHED 1200 Cross-Country Skiing	(1)
PHED 1250 Cycling	(1)
PHED 1170 Introduction to Mountain Hiking	(1)
PHED 1150 Canoeing	(1)

PHED 1300 Recreational Sports (1)
PHED 1130 Dance Aerobics (1)
PHED 1220 Modern Jazz (1)

Specialization II Dance 16 cr.

Professional Course Requirements (12)

PHED 4050 Art of Dance (3)
PHED 4070 Introduction to Dance Movement Therapy (3)
PHED 4130 Making Dances Choreography and Composition (3)
PHED 4100 Movement Education (3)

Physical Activity Course Requirements (4)

PHED 1130 Dance Aerobics (1)
PHED 1210 Modern Jazz I (1)
PHED 1220 Modern Jazz II (1)
PHED 1230 Modern Jazz III (1)
PHED 1310 Afro Jazz Dance (1)

Specialization III Recreation/Dance 16 cr.

Professional Course Requirements (12)

PHED 4110 Programs in Recreation (3)
PHED 4010 Recreational Leadership (3)
PHED 4070 Introduction to Dance Movement Therapy (3)
PHED 4130 Making Dances: Choreography and Composition (3)

Physical Activity Course Requirements (4)

PHED 1180 Backpacking (1)
PHED 1150 Canoeing (1)
PHED 1200 Cross Country Skiing (1)
PHED 1250 Cycling (1)
PHED 1170 Introduction to Mountain Hiking (1)
PHED 1280 Orienteering (1)
PHED 1300 Recreational Sports (1)
PHED 1130 Dance Aerobics (1)
PHED 1210, 1220 or 1230 Modern Jazz I, II, or III (1)
PHED 1310 Afro Jazz Dance (1)

Health and Fitness Requirement

All students must satisfy a three hour credit requirement in Health and Fitness.* This requirement may be met by the successful completion of one of the following three group options. All of the group options are taught in a lecture/laboratory manner and include a physical activity component.

Option I–One course from Group I,
Option II–Three courses from Group II,
Option III–Two courses from Group II and one from Group III

*Nursing majors must satisfy a one credit hour requirement which can be met by the successful completion of one course from Group II or Group III. (Exceptions–Consumer Health and Standard First Aid do not meet the physical activity component requirements.)

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

Group I

PHED 1000 3 cr. 3 hr.
Health and Fitness
A basic survey of the effects of diet, exercise and selected environmental agents upon human, mental and physical health. Topics may include body build and body composition, fitness evaluation and programming, nutritional considerations, psychological correlates of health, chemical alterations, human sexuality, and personal and public health.

PHED 3050 3 cr. 3 hr.
Adaptations
The human organism is examined in terms of its adaptation to acute and chronic stress. Physiological responses to such stressors as exercise, heat, and darkness, altitude, and nutrition are studied theoretically and in a laboratory setting.

PHED 3060 3 cr. 3 hr.
Exercise, Nutrition and Heart Disease
This course is designed to examine the integrative relationships inherent in the study of exercise, nutrition, and heart disease. Body build and body composition assessments are made, exercise prescriptions and programs are developed, and prevalent controversies in the areas of obesity, dietary goals, guidelines and plans, atherosclerosis, and heart disease are discussed.

PHED 3070 **3 cr. 3 hr.**
Exercise and Sport Science
Basic exercise physiology is explored as it relates to the health professions. Theoretical topics include orientation to exercise, movement and energy production, neurological aspects of movement, cardiopulmonary, and hormonal factors in exercise. Practical topics include: cardiovascular stress testing, nutrition and weight control, physique and body composition, fitness programming, the influence of activity on growth, respiratory responses to exercise, and environmental effects such as altitude and temperature.

Group II

PHED 2000 **1 cr. 2 hr.**
Jogging: Theory and Practice
The theories and practices of cardiovascular conditioning using jogging as the activity mode are presented. Pre-post cardiovascular and body composition evaluations are made and program prescriptions are designed. Topics covered include those of Training Principles and Programs. Energy Sources: Aerobic and Anaerobic Processes, Nutrition, Exercise and Weight Control, Exercise Training Effects, Psychological Considerations, Environmental Conditions, and Injuries and Running.

PHED 2030 **1 cr. 2 hr.**
Consumer Health
This course is designed to help the student evaluate health information critically, and select products and services wisely. The past, present, and future of quackery will be explored especially in the areas of food, cosmetics, and chronic disorders. Laws and protection agencies, governmental and private, will be surveyed.

PHED 2040 **1 cr. 2 hr.**
Diet, Exercise, and Weight Control
The course is designed for those interested in weight loss or weight maintenance through the medium of diet and exercise. After an initial assessment of body composition, aerobic fitness, muscular fitness and the establishment of dietary goals, each student will work toward body weight goals through actual programs of exercise and diet.

***PHED 2060** **1 cr. 2 hr.**
Controversies in Nutrition
This course is designed to study the nutritional issues prevalent today. The available evidence will be presented to explain, clarify, and summarize the positions taken by investigators in the field.

PHED 2070 **1 cr. 2 hr.**
Figure Control
Through Weight Training
The theory of weight training and diet in relation to figure control will be discussed. Each student will undergo physique, body composition, aerobic fitness, and muscular strength evaluations before and after a weight training program.

PHED 2080 **1 cr. 2 hr.**
Weight Training for Athletes
Theory for the development of muscular strength for specific athletic activities. Anthropometric, body composition, and muscular strength evaluations will be under taken prior to and following an individually developed weight training program.

PHED 2090 **1 cr. 2 hr.**
Standard First Aid
A behaviorally oriented course structured for those responsible for the safety and protection of others. A standard First Aid certificate will be issued if the student satisfies all the American Red Cross requirements.

PHED 2110 **1 cr. 2 hr.**
Techniques of Road Racing
The purpose of the course is to acquaint the student with various topics of running long distance road races. Topics include the physiology of running, training strategies, injury care and prevention, nutritional aspects and methods of assessing running ability. Each student will undertake a training program, serve on a committee to organize a road race and participate in three road races.

Group III

Activity courses are taught on a semester basis. Each semester carries 2 clock hours and 1 credit.
PHED 1010 Basketball
PHED 1020 Volleyball
PHED 1040 Tennis
PHED 1050 Advanced Tennis

PHED 1060 Badminton
PHED 1070 Karate
PHED 1080 Judo
PHED 1120 Aerobics
PHED 1130 Dance Aerobics
PHED 1150 Canoeing
PHED 1170 Introduction to Mountain Hiking
PHED 1180 Backpacking
PHED 1190 Downhill Skiing
PHED 1200 Cross Country Skiing
PHED 1210 Modern Jazz I
PHED 1220 Modern Jazz II
PHED 1230 Modern Jazz III
PHED 1250 Bicycle Touring
PHED 1280 Orienteering
PHED 1300 Recreational Sports
PHED 1310 Afro Jazz Dance

Professional Courses

PHED 4000 **3 cr. 3 hr.**
Fundamentals of Coaching
An analysis of the principles and practices of coaching in various sports will be presented for the prospective teacher-coach.

PHED 4010 **3 cr. 3 hr.**
Recreational Leadership
The organization and administration of recreational activities will be presented in reference to the development of the principles and practices in both school and community programs.

***PHED 4020** **3 cr. 3 hr.**
Camp Counseling
Course content provides an opportunity to study some of the problems in the field of camping, to acquire skills essential in camp life, to develop various leadership styles as a camp counselor, and to address the individual and group needs of campers.

PHED 4030 **3 cr. 3 hr.**
Physical Education: An Overview
This course is designed to provide the student with an overview of the philosophic history, administrative patterns, current curriculum approaches, teaching and learning concepts, legal aspect considerations, and innovative trends in physical education.

PHED 4040 **3 cr. 3 hr.**
Motor Learning and Physical Performance
This course is designed to provide students with an overview of the study of motor learning and physical performance. Selected motor learning theories and the factors of skill acquisition will be covered relative to the physical performance parameters of practice and the applied processes of instruction.

PHED 4050 **3 cr. 3 hr.**
Art of Dance (Arts Credit)
This course offers students the opportunity to experience dance aesthetically, kinesthetically, and intellectually. Representative styles from tribal dance to the present will be covered. Films, movement labs, papers, presentations, concert attendance, and performance may be included. Teaching in the After School Movement Program at McKay is possible.

PHED 4060 **3 cr. 3 hr.**
Outdoor Education
This course is designed to explore and experience the use of the outdoors as a medium in the educational process. Topics will include: introduction to outdoor education, teaching methodology, basic principles of high adventure activities, school camping, and outdoor education programs. Students will participate in a number of outdoor adventure activities.

PHED 4070 **3 cr. 3 hr.**
Introduction to Dance Movement Therapy
The purpose of this course is to study the dance therapy and movement processes designed to further physical, emotional, and spiritual integration. Kinesthetic principles and practices will be explored through structured and improvised movement experiences. Effort/Shape Analysis and Chase-Movement Therapy techniques will be utilized to enable students to increase their movement ranges, discover their own movement preferences, and develop leadership skills. Teaching in the After School Movement Programs at McKay is recommended.

PHED 4080 **1 cr. 2 hr.**
Physical Education in the Elementary School
A theory and practice course designed to guide the classroom teacher in organizing a comprehensive program of physical education activities.

***PHED 4090 3 cr. 3 hr.**
Officiating Basketball and Volleyball
The philosophy and techniques of officiating basketball and volleyball for women, DGWS rules are used for both sports, and an opportunity is presented to take the written and practical national examination to obtain a rating in either or both sports.

PHED 4100 3 cr. 3 hr.
Movement Education
Movement Education is a theoretical and an experiential course designed for working with the creative process in an interdisciplinary manner. The relationship of movement in developmental processes will be explored. Movement experiences, group leadership, curriculum development, and evaluation will be covered. Teaching in the After School Movement Program at McKay is recommended.

PHED 4110 3 cr. 3 hr.
Programs in Recreation
This course is designed to acquaint students with different types of programs in the recreation field. The development of traditional and innovative programs will be explored and evaluated in the classroom and through field trips. Topics will include: program foundations, traditional and innovative curricula, program planning, implementation, and evaluation.

PHED 4120 3 cr. 3 hr.
Biomechanics of Sport
A study of the anatomical and mechanical aspects that underlie human motion. Anatomical considerations include joint-function and structure, physiology of muscle function, and neuromuscular integration. Mechanical considerations include describing motion in terms of linear and angular acceleration, velocity, and projectiles, and the determination of motion by studying force, inertia, mass, momentum, impulse, friction, buoyancy, center of gravity, stability, and drag and lift. The application of these anatomical and mechanical principles will be related to the improvement of performance of selected sports.

PHED 4130 3 cr. 3 hr.
Making Dances: Choreography and Composition (Arts Credit)
Opportunities to develop and analyze the structure and imagery of dances and music through effort/shape theory will be offered. Each participant will work improvisationally, and as choreographer and dancer in the development of solo, small and large group works. Course evaluation will include concert attendance, performance, and written assignments. Teaching in the After School Movement Program at McKay is possible.

PHED 4140 3 cr. 3 hr.
Scientific Foundations of Athletic Training and Conditioning
This course is designed to discuss the principles of injury prevention and care, the physiology of training, and nutritional considerations as they apply to athletics.

PHED 4150 3 cr. hr.
Body Build and Physical Performance
This course is designed to provide students with an overview of the field of body build relative to structure, size, and composition, and the study of exercise, nutrition, and heart disease. Body build and body composition assessments will be made, exercise prescriptions and programs will be developed, and prevalent controversies in the areas of nutrition and heart disease will be examined.

PHED 4160 1 cr. 2 hr.
Psychology of Sport
A basic overview of the psychological impact of sport upon participants and spectators. The areas of motivation, winning and losing, competition, behavior modification, aggression and the study and analyzation of reaction profiles used in the observation of emotional behaviors will be studied.

PHED 4900 1-3 cr.
Independent Study
Open to students who have permission of the supervising instructor and the department. Course of study, meetings, and credit by arrangement.

PHED 5000 1 cr. 1 hr.
Topics in Physical Education
Courses having a narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Physics

Chairperson: *Robert Champlin*

Assoc. Professor: *Ali Errishi*

Professors: *Norman Fredette*, *Esmail Valenejad*

Asst. Professor *Lawrence Guth*

Course Offerings

An asterisk indicates that the course may be offered less than once every two years.

"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

PHYS 1010, 1020, 1030 and 1040 are for non-science majors and are strongly recommended to students at large for satisfying their General Education requirements.

PHYS 1150 (Physics for the Life Sciences), although developed primarily for the medical technology majors, this course can be viewed as a one-semester terminal physics course for any student.

PHYS 1300 and 1400 are the standard non-calculus General Physics courses offered at most baccalaureate institutions. It is the sequence taken by chemistry, mathematics and most industrial technology majors. They are also appropriate to the non-science major interested in applying mathematical problem-solving techniques to physical settings.

PHYS 2100, 2200, 3100, 3200, 4100, and 4200 are all advanced courses that will be offered from time to time in the form of free electives to those students who have had PHYS 1300 and 1400 and have shown keen interest in physics and mathematics.

PHYS 1010, *1020 **3 cr. 4 hr.**
Physical Science I and II
For the non-scientist. Emphasis is upon the building of conceptual models, problem solving techniques, and the processes of science.

PHYS 1030 **3 cr. 3 hr.**
Astronomy
A study of planetary motion, the sun, stars and galaxies. Mathematical analyses are mostly qualitative.

***PHYS 1040** **3 cr. 4 hr.**
Environmental Physical Science
The study of (1) the environment, (2) the effects of pollution on the environment, ecosystems, and natural balance and (3) relevant background material in physical science as needed.
Prerequisites: Physical Science I, Earth, Sea and Air, or equivalent.

***PHYS 1100** **3 cr. 4 hr.**
Physics for Industrial Technology
This is a course in elementary Physics with particular emphasis on applications in the area of industrial technology. Topics include kinematics, statics, dynamics, work and energy, simple machines, fluid dynamics, and heat transfer.

***PHYS 1150** **4 cr. 6 hr.**
Physics for the Life Sciences
An introduction to Physics which includes a brief treatment of force, work and energy and an emphasis on the nature of waves, optics and electricity.

PHYS 1300 **4 cr. 5 hr.**
General Physics I
Mechanics: Straight line motion; circular motion; Kepler's law of planetary motion, universal gravitation, work, energy, power, conservation of energy and momentum, simple harmonic motion. Hydrostatics and hydrodynamics: Archimedes' principle, Bernouli's equation, viscosity, Stokes law, Reynolds number. (Simultaneous enrollment in a laboratory (1301) and a seminar (1302) is required.)
Prerequisite: Ability to manipulate algebraic equations.

PHYS 1400 **4 cr. 6 hr.**
General Physics II
Electricity and Magnetism: Coulomb's law, electric field, electric potential, capacitance, electric circuits, magnetic field, magnetic forces on a current-carrying conductor, magnetic field of a current, induced e.m.f., magnetic properties of matter. Geometrical Optics: Laws of reflection and refraction; mirrors; lenses; optical instruments; eye and its optical defects and their correction; illumination and color. Physical Optics: interference and diffraction; polarization. (Simultaneous enrollment in a laboratory (1401) and a seminar (1402) is required.)
Prerequisite: Ability to manipulate algebraic equations.

***PHYS 2100** **3 cr. 3 hr.**
General Physics III
Atomic and Nuclear Physics: Electronic configuration of the atoms, Bohr atom, atomic spectra, X-rays; radioactivity and radiation hazards.
Prerequisite: PHYS 1400.

***PHYS 2200** **3 cr. 3 hr.**
Intermediate Mechanics
Calculus and delta methods are used in an analytical study of Newtonian mechanics with application to nonconservative forces, central forces, and rotational dynamics. Linear oscillator, free and forced oscillations, damping, vibrating string, traveling and standing waves.
Prerequisite: PHYS 1300 or equivalent.

***PHYS 3100** **3 cr. 3 hr.**
Quantum Mechanics
Inadequacies of classical physics, uncertainty principle, Schrodinger equation, physical interpretation of wave function, energy levels, harmonic oscillator, hydrogen atom, and perturbation theory.
Prerequisites: PHYS 2100 and MATH 2400.

***PHYS 3200** **3 cr. 3 hr.**
Electricity and Magnetism
After a preliminary introduction to vector algebra, electrostatic as well as magnetostatic fields in vacuum and material media are discussed. Maxwell's equations and propagation of electromagnetic waves are considered.

***PHYS 4100** **3 cr. 3 hr.**
Statistical Mechanics and Thermodynamics
Laws of thermodynamics, entropy, Carnot cycle, kinetic theory of gases, Bose and Fermi gases, and low temperature physics.
Prerequisite: PHYS 3100.

***PHYS 4200** **3 cr. 4 hr.**
Solid State Physics
Short review of quantum mechanics, crystal structure magnetism semiconductor theory, specific heat of solids.
Prerequisite: CSC 1600.

PHYS 4900 **1, 2, 3 cr.**
Independent Study
Open to students who have permission of the supervising instructor and the department. Course of study, meetings, and credit by arrangement.

***PHYS 5000** **3 cr. 3 hr.**
Topics in Physics
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Political Science

Chairperson: *Edmund Thomas*
Assoc. Professor: *Feng Chou*

Courses in political science are intended for any student with a general interest in politics and government. They are also designed to provide a proper background for students interested in pursuing graduate study or a career in law, public administration, or government and political science.

The Minor in Political Science

The minor in political science includes POLS 1000, U.S. Government, and 15 additional credits in political science including independent study and up to 3 credits of political or legal internship credit.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

POLS 1000 **3 cr. 3 hr.**
United States Government
In Modern American Government, the major political institutions, i.e., the Presidency, the Congress, and the Supreme Court, are examined. Their constitutional antecedents and their modern functions are presented. Special attention is given to the current bureaucracy, elections, and the political actors in the election process.

POLS 1500 **3 cr. 3 hr.**
State and Urban Government
Focus upon current issues in urban and state government and politics and attempts to evaluate proposed solutions.

IDIS 1800 **3 cr. 3 hr.**
Global Issues
This course examines the interdependency of the world's nations by focusing on current events in the international arena and issues such as ozone deple-

tion, pollution, the global economy, conflict and cooperation, population and hunger. C

***POLS 2200** **3 cr. 3 hr.**
Contemporary International Relations
A study of critical problems confronting the present international system. The "Cold War," armed conflict, internal violence, as well as prospects for the resolution of conflict are explored.

POLS 2270 **3 cr. 3 hr.**
Introduction to the Legal Process
An introduction to the American legal system: how courts and lawyers function, how cases are decided, and the means by which courts interpret legislation. Open to any student, but recommended for those interested in the legal internship program.

***POLS 2500** **3 cr. 3 hr.**
Political Systems of the Modern World
A comparative analysis of modern national governments such as Russia, France, Germany, and Great Britain. The importance of the world's political heritage and the implications for the emerging nations of liberal democracy, communism, and dictatorship are explored.

POLS 3000 **3 cr. 3 hr.**
Public Policy Analysis: Case Studies in American Politics
Covers four major divisions of public policy: health, education, labor, and welfare. The aim is to attain an understanding of how the American political system works through a study of the policy that has come out of that system.
Prerequisite: POLS 1000 or POLS 1500.

***POLS 3600** **3 cr. 3 hr.**
Civil Rights and Civil Liberties in the United States
Conceptual perspectives of civil rights and civil liberties, freedom of expression and the problem of loyalty and security, equality, the civil rights movement, criminal justice procedures, and the politics of civil rights and liberties.

POLS 4900 **3 cr. 3 hr.**
Independent Study in Political Science
Open to students who have the permission of the supervising instructor and the department. Course of study, meetings, and credit by arrangement.

POLS 4940 **3 cr. 3 hr.**
Internships in Political Science
Off-campus opportunities, carrying appropriate academic credit, are available in local, state, and federal government offices and with political campaigns. Open to students who have the permission of the department. Credit and hours by special arrangement.

POLS 4950 **6 cr. 12 hr.**
Legal Internship
Internships are available in several regional law offices for those persons interested in paralegal work. These internships prepare students for positions in law offices, public administration, and other human service work. Credit is either 6 or 12 semester hours depending upon arrangements with the Social Sciences Department.

POLS 5000 **3 cr. 3 hr.**
Topics in Political Science
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Psychology

Chairperson:
Mary Ann Hanley

Coordinator:
Alan Bernstein

Asst. Professors:
Richard Kruse
Alice LoCicero
John Solin
Suzanne Weaver

Professors:
Alan Bernstein
G. Jefferson Breen
E. Arthur Garvin
Carol Gay
Paul Girling
Mary Ann Hanley
Peter Hogan
Anita Hotchkiss
Allan Kimmel
David Maloney
Beverly Roder
Mabel Sgan
Richard Spencer

The Psychology program is a component of the Behavioral Sciences Department. It serves majors and minors in the discipline and offers supportive courses for a variety of other programs in the college.

Aims and Objectives

The goal of the psychology program is to educate students in the scientific study of human behavior. The program combines theoretical, methodological and applied topics. This enables students to acquire knowledge and skills that will enrich their personal lives and work careers.

The Major in Psychology

The degrees of Bachelor of Arts and Bachelor of Science in Psychology require a minimum of thirty-seven semester hours of course work in Psychology, beyond the course in General Psychology. (The Bachelor of Arts degree requires foreign language proficiency at the second year college level.)

The program is divided into three groups of courses: required courses, area electives, and integrated or pre-professional courses.

Liability insurance is required of all students enrolled in field-based courses, or in other courses when deemed necessary.

Requirements for the Psychology Major

Group I

Required Courses

PSY 1100 General Psychology (not counted toward major)
PSY 2110 Intro. to Research Methods
PSY 2120 Psychological Statistics
PSY 3410 Experimental Psychology
PSY 3480 History and Systems in Psychology

Group II

Area Electives

At least one course required from each area.

Area 1: Developmental

PSY 2210 Child Psychology
PSY 2230 Adolescent Psychology
PSY 2240 Adult Development
PSY 2250 Psychology of Women
PSY 2260 Gerontology
PSY 2280 Psychology of Human Sexuality
PSY 2320 Psychology of Death and Dying

Area 2: Adaptive

PSY 2160 The Psychology of Speech and Communication
PSY 2300 Psychology of Personality
PSY 2330 Psychology of Intimacy
PSY 2350 Abnormal Psychology
PSY 2370 Interpersonal Effectiveness
PSY 2400 Psychology of Captivity
PSY 2500 Social Psychology
PSY 2550 Group Dynamics
PSY 2570 Small Group Leadership PSY 2620 Work and the Individual

Area 3: Basic Processes

PSY 3420 Physiological Psychology
PSY 3430 Perception
PSY 3500 Psychology of Learning
PSY 3530 Motivation
PSY 3550 Cognition

Area 4: Applied Studies

PSY 2450 Psychological Testing
PSY 2610 Organizational Psychology
PSY 2630 Human Factors/Ergonomics
PSY 2640 Performance Appraisal and Development
PSY 2650 Personnel Psychology
PSY 2710 Learning Theory and Its Application
PSY 2770 Principles of Guidance

Topics in Psychology, when offered, may serve as a required elective for the appropriate Group II area.

Group III

Integrative or Pre-Professional Courses

At least one course is required
PSY 3220 Advanced Child Psychology
PSY 4800, 4803 Teaching Practicum
PSY 4810, 4820 Practicum in Psychology
PSY 4900 Independent Study
PSY 4920 Advanced Psychology Seminar
PSY 4940, 4950, 4960 Internship in Psychology

The remainder of the 9 credits in psychology may be earned by taking additional courses from Groups II and III.

Concentrations

Students may choose to develop special expertise in one of two areas: Developmental Psychology or Industrial/Organizational Psychology. In either case, students should consult the Psychology Student Handbook for

guidelines. (These concentrations are available to any student majoring or minoring in psychology.)

Concentration in Industrial and Organizational Psychology

This concentration is designed to prepare students to enter a wide range of occupations in business and industry. It is particularly appropriate for those intending careers in personnel or human resource functions. The concentration requires students to take 12 semester hours of course work from the courses listed below.
PSY 2610 Organizational Psychology (required)
PSY 2620 Work and the Individual PSY 2630 Human Factors/Ergonomic PSY 2640 Performance Appraisal and Development
PSY 2650 Personnel Psychology
PSY 5000 Topics in Psychology (where applicable)

Internships in Industrial and Organizational settings are available and strongly recommended for students taking this concentration.

Concentration in Developmental Psychology

This concentration is appropriate for students who plan to undertake advanced work in developmental psychology, or who seek future employment in related fields. Students must take at least 12 s.h. of coursework from two groups of courses. Courses in Group I provide an introduction to various topics in developmental psychology. Courses in Group II provide opportunities for in-depth exploration of issues through basic research and special projects.

Three of the following Group I courses are required: PSY 2210, PSY 2230, PSY 2240, PSY 2250, PSY 2260, PSY 5000. Topics in Psychology (where applicable).

One of the following Group III courses is required: PSY 3220, PSY 4810, PSY 4820, PSY 4950, PSY 4900.

The Minor in Psychology

The minor in Psychology requires a minimum of 18 semester hours of course work in the area, beyond the course General Psychology.

The Psychology minor is designed to enable the student (a) to understand and evaluate psychological research and literature; (b) to choose courses which complement and relate to the major field of study; and (c) explore a particular interest in psychology in some depth. Accordingly, the following course organization is required:

Group I: Two courses are required: PSY 1100 General Psychology (prerequisite; not counted towards minor), PSY 2110 Introduction to Research Methods.

Group II: At least one course is to be taken from EACH of any THREE of the four areas described under the major; (Adaptive, Applied Studies, Basic Processes, and Developmental). The remaining required course may be selected from either the integrative courses or any one of the above mentioned areas. Courses may also include PSY 2220 Human Growth and Development and PSY 2750 Tests and Measurements.

Course Offerings

*Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

PSY 1100 **3 cr. 3 hr.**
General Psychology
Introduces the student to the contemporary discipline of the science of human behavior and mental processes. Topics for investigation include the scientific method, biological bases of behavior, maturation, motivation, emotions, learning, personality, and adjustment. The course is prerequisite for all other courses in Psychology.

PSY 2110 **3 cr. 3 hr.**
Introduction to Research Methods
The emphasis in this course is on research design, including consideration of sampling procedures, questionnaire design, methods of observation and reporting.
Prerequisite: PSY 1100.

PSY 2120 **3 cr. 3 hr.**
Psychological Statistics
This course expands upon the mathematical concepts introduced in Math 1700. Descriptive statistics are reviewed

and inferential statistics are introduced. Analyses considered include tests and analysis of variance up to and including factorial designs. Computer analysis is emphasized. Meets partial LAS requirement for computer literacy in Psychology major.
Prerequisites: PSY 1100, PSY 2110 and MATH 1700.

PSY 2160 **3 cr. 3 hr.**
The Psychology of Speech and Communication
This course provides information for judging speech behaviors of self and others. Topics such as concepts of speech, language and communication, effective speaking and listening behaviors, non-verbal communication, animal communication, linguistic and psycholinguistic theory are covered. Meets LAS speaking and listening requirement for the Psychology major.
Prerequisite: PSY 1100.

PSY 2200 **3 cr. 3 hr.**
Human Growth and Development
This life-span course emphasizes a study of the physical, physiological, social, and psychological development of the individual from conception to old age.
Prerequisite: PSY 1100. (Cannot be used as credit toward the major, but may be used for the minor.)

PSY 2210 **3 cr. 3 hr.**
Child Psychology
This course offers an introductory over view of the developing child from conception through preadolescence. Theories and research are used to lay the foundation for the study of the physical, cognitive, social and emotional development of the child. Also considered are such topics as attachment, moral development, language acquisition, and genetic and environmental influences on development. This course meets the Office for Children requirement for Category-A daycare certification.
Prerequisite: PSY 1100.

PSY 2230 **3 cr. 3 hr.**
Adolescent Psychology
Adolescence as a stage of development and as a cultural phenomenon is investigated. The influence of physical, cognitive, and psychosocial factors on the adolescent's search for identity is examined. Emphasis is on an interdisciplinary approach that draws on relevant theories and research from a wide range of fields.
Prerequisite: PSY 1100.

PSY 2240 **3 cr. 3 hr.**
Adult Development
This course introduces the student to theories and research for the periods of young and middle adulthood. Physical, mental, and personality processes are covered, as well as issues and problems of research in adult development. Application of this knowledge to adults in their relationships and in their work settings is stressed.
Prerequisite: PSY 1100.

PSY 2250 **3 cr. 3 hr.**
Psychology of Women
Objectives of this course include an increased awareness of the psychological development of women and of the dimensions of self and personhood in relation to society; the examination and analysis of issues relative to current debate concerning the status of women.
Prerequisite: PSY 1100.

PSY 2260 **3 cr. 3 hr.**
Gerontology: The Psychology of Growing Old
This course examines the developmental changes, including both gains and losses, which occur in the later part of the lifespan. The course will focus on theory and research related to biological, physical, cognitive, and psychosocial changes which occur in late life. The emphasis will be on understanding the normal aging process. Research methods and designs used to study aging will also be covered.
Prerequisite: PSY 1100.

PSY 2280 **3 cr. 3 hr.**
Psychology of Human Sexuality
This course includes a study of the relationships among the various aspects of sexuality, including relationships, social norms, and cross-cultural variations in sexual behavior.
Prerequisite: PSY 1100.

PSY 2300 **3 cr. 3 hr.**
Psychology of Personality
Dynamic factors in personality formation are studied through some of the leading theoretical positions on personality development.
Prerequisite: PSY 1100.

PSY 2320 **3 cr. 3 hr.**
Psychology of Death and Dying
Through lectures, readings, discussions, and media, students explore psychological theory, research, and personal feelings concerning the dying process, suicide, grief, sudden death, and dying as it influences persons at different developmental stages.
Prerequisite: PSY 1100.

PSY 2330 **3 cr. 3 hr.**
Psychology of Intimacy
This course examines the dynamics of partner selection and the process of creating a relationship which maximizes the development of personal integrity and interpersonal security.
Prerequisite: PSY 1100.

PSY 2350 **3 cr. 3 hr.**
Abnormal Psychology
Normal, neurotic, and psychotic behavior and methods of psychotherapy are reviewed. Emphasized are techniques for maintaining optimal psychological health.
Prerequisite: PSY 1100.

PSY 2370 **3 cr. 3 hr.**
Interpersonal Effectiveness
This is a lab-based course which introduces and develops interpersonal competence, particularly as it pertains to dyadic situations. Basic skill areas such as observation, listening and questioning will be addressed, as will integrative skills such as conflict resolution and relationship development. Students will be asked to become more aware of their own interpersonal behavior, and introduced to the extensive research literature on interpersonal behavior. Applications in both the personal and the professional domain will be addressed. Meets LAS speaking and listening requirement for the Psychology major.
Prerequisite: PSY 1100.

PSY 2400 **3 cr. 3 hr.**
Psychology of Captivity
This course deals with the effects of captivity on both the captive and the captor. Materials include films, tapes, interviews, first-person accounts, systematic studies of experiences, and the long-term consequences on persons involved and on their children.
Prerequisite: PSY 1100.

PSY 2450 **3 cr. 3 hr.**
Psychological Testing
This course is designed to give students a broad understanding of the theory and use of psychological testing. Methods of test evaluation, analysis, and interpretation are presented. Standardized testing instruments used to measure human cognitive and affective factors are explored and their purposes reviewed.
Prerequisite: PSY 1100.

PSY 2500 **3cr. 3 hr.**
Social Psychology
This course provides an introduction to the study of human social behavior. Representative topics include: attitudes and their formation, aggression, prosocial behavior, conformity, and interpersonal attraction, as well as group dynamics, structure, and leadership. The application of social-psychological research to contemporary social problems also will be considered.
Prerequisite: PSY 1100.

PSY 2550 **3 cr. 3 hr.**
Group Dynamics
The nature and dynamics of interpersonal relationships are revealed in typical group settings such as classrooms, workshop seminars, and other discussion-oriented groups. Emphasis is on both content and process as demonstrated in a laboratory learning environment. Meets LAS speaking and listening requirement for the Psychology major.
Prerequisite: PSY 1100.

PSY 2570 **3 cr. 3 hr.**
Small Group Leadership
This course is designed to equip students to plan and conduct meetings requiring the coordination of effort of small groups of people. Participants will study and practice basic leadership skills applicable to a variety of small group settings. They will develop and demonstrate these skills in the context of small group participation in class and as leaders of extra class groups. Meets LAS speaking and listening requirement for the Psychology major.
Prerequisite: PSY 1100.

PSY 2610 **3 cr. 3 hr.**
Organizational Psychology
This course examines organizational influences on motivation and satisfaction of the workforce. Methods of surveying organizational climate are introduced, and a variety of intervention

methods are evaluated. Organizational experience in Japan, Western Europe, and the United States will be analyzed and compared.
Prerequisite: PSY 1100.

PSY 2620 **3 cr. 3 hr.**
Work and the Individual
This course considers the ways in which individuals meet their needs for growth and development while the organization meets its needs for worker productivity. How the organization's needs affect workers and how workers react to these pressures are subjects studied. Topics include work as a basic human need, relationships with co-workers, interpersonal skills, uses of power influence, leading and motivating others, meeting personal needs/job satisfaction, adaptation to change, problems in adaptation (alcohol, drugs, interpersonal, lack of competence, etc.), stress management, and career development.
Prerequisite: PSY 1100.

PSY 2630 **3 cr. 3 hr.**
Human Factors/Ergonomics
Students develop the ability to fit the demands of people and work together. Competence is developed in tailoring work conditions and equipment to facilitate human performance and in identifying the skills required by the job.
Prerequisite: PSY 1100.

PSY 2640 **3 cr. 3 hr.**
Performance Appraisal and Development
The definition, measurement, and development of performance in complex work roles are analyzed. An essential ingredient of the course are participative workshops aimed at developing the skills of behavior observation, performance coaching, and training.
Prerequisite: PSY 1100.

PSY 2650 **3 cr. 3 hr.**
Personnel Psychology
This course will provide a treatment of the major issues in personnel psychology and will emphasize the psychological aspects of personnel systems. The focus of the course will be on the psychological assessment of potential and current employees as a means for "fitting" workers into jobs, the employment discrimination issues that may emerge in the work setting, and the use and interpretation of descriptive and inferential statistics in personnel decision making.
Prerequisite: PSY 1100.

PSY 2710 **3 cr. 3 hr.**
Learning Theory and Its Applications
This course focuses on the principles and theories of learning, as derived by both the laboratory psychologist and the educational researcher, as applied to various social settings: the classroom, the family, etc.
Prerequisite: PSY 1100.

PSY 2750 **3 cr. 3 hr.**
Tests and Measurements
This is a study of the basic statistical concepts and techniques of measurement, with application to teacher-made tests and standardized tests used in education and psychology.
Prerequisite: PSY 1100. (Cannot be used as credit toward the major, but may be used for the minor.)

PSY 2770 **3 cr. 3 hr.**
Principles of Guidance
This course introduces students to the psychological theory and research underpinning practice in school guidance counseling.
Prerequisite: PSY 1100.

PSY 3220 **3 cr. 3 hr.**
Advanced Child Psychology
This course explores in greater depth principles and theories learned in PSY 2110 and acquaints the student with methodology used in contemporary research in child psychology. Through assigned exercises and individual projects, students will focus on selected issues in child development. Students will work directly with children in applying the principles and techniques learned in the course.
Prerequisites: PSY 2210 or PSY 2230, PSY 2110, MA 1700, a 2.5 cumulative average and permission of instructor. Strongly recommended: PSY 2120.

PSY 3410 **4 cr. 4 hr.**
Experimental Psychology
This course is an analysis and study of the scientific method, experimental designs, and laboratory methods in behavioral science, emphasizing laboratory experiments and scientific communication of results. Students design, analyze, and report their own research. Computer data analysis is also

covered. Meets LAS writing requirement for computer literacy for the Psychology major.
Prerequisites: PSY 2110, 2120, and MATH 1700; junior or senior standing in the major, permission of Instructor.

PSY 3420 3 cr. 3 hr.
Physiological Psychology
This course concentrates on the relationship between the nervous system and behavior. Experiments and theories of several disciplines have contributed to this understanding: neuroanatomy, physiology, biochemistry and psychology. The course is designed to introduce and familiarize students with relevant information from each of these fields. Topics include hormones and sexual and aggressive behaviors; brain regulation of sleeping and dreaming, genetic, anatomical physiological and neurochemical bases of emotions and mental disorders; biological, neural and biochemical basis of learning and memory. Special emphasis will be givento current research results in neuroscience and their implications for clinical application. IDIS
Prerequisite: PSY 1100.

PSY 3430 3 cr. 3 hr.
Perception
Principles related to a person's awareness of his or her world are studied. Topics to be considered are psychophysics, the relationship between motivation and perception, the sensory bases of perception, and localization in space.
Prerequisite: PSY 1100.

PSY 3480 3 cr. 3 hr.
History and Systems of Psychology
This advanced course provides a consideration of contemporary psychology as seen in its historical perspective. The development of psychological concepts and theories is traced from their antecedents in philosophy and the physical sciences.
Prerequisites: Junior or Senior standing, 15 credits in psychology.

PSY 3500 3 cr. 3 hr.
Psychology of Learning
This course focuses on principles and theories of learning, classical conditioning, operant conditioning, verbal learning, and acquisition of motor skills.
Prerequisite: PSY 1100.

PSY 3530 3 cr. 3 hr.
Motivation
Characteristics of motivated behavior, explanation of sources of motives, and application of theories to current research and interpersonal skills are studied in this course. Emphasis is on the biological, learned, and cognitive components of motivation. Topics include internal and external motives, the relationship of stress and motivation, the place of physiological processes in motivation, issues in motivation of others, motivation for aggressive/passive behaviors, and success/failure motivation.
Prerequisite: PSY 1100.

PSY 3550 3 cr. 3 hr.
Cognition
This course will emphasize a scientific approach to the study of human cognition. Early in the course, students will learn about the basic neurocognition that underlies the thinking processes. Next, they will consider the historical roots of the discipline, with special focus on those theorists whose thought has influenced the development of the field. Later in the course, they will explore the most influential explanation of human cognition function to date—the information processing paradigm. Most of the major subtopics in cognition (storage and retrieval of information, attention, comprehension, categorization, problem-solving, etc.) will be considered. In addition, some of the new directions in cognition psychology (e.g., artificial intelligence) will be discussed. Serving as continuing underlying themes throughout the course, will be the methodologies that support the science. In addition to lectures, there will be frequent in-class and out-of-class demonstrations and exercises. These components of the course will be designed to illustrate concepts covered in the lectures and in the required readings, and to give the students experience applying the principles and techniques encountered in the course.
Prerequisite: PSY 1100.

PSY 4800 **6 cr. 18 hr.**
PSY 4803 **3 cr. 9 hr.**
Teaching Practicum
Students assist an individual faculty member in the teaching of psychology. Responsibilities vary with the course. By invitation of faculty only.
Prerequisite: 3.0 cumulative average overall and in the major.

PSY 4810 **3 cr. 9 hr.**
PSY 4820 **6 cr. 18 hr.**
Practicum in Psychology
Students perform basic and applied work in psychology. Students work with staff in areas of mutual interest.
Prerequisite: a 2.5 cumulative average in psychology and permission of Instructor.

PSY 4900 **1-6 cr. 3-18 hr.**
Independent Study
This experience is offered primarily to psychology students of junior or senior standing, and requires approval of the professor and of the Psychology Curriculum Committee. The student must petition the Psychology Curriculum Committee the semester prior to undertaking the independent study. Independent study may take the form of: special advanced reading programs; problem identification and research; assistantships; acquisition of professional skills. Under no circumstances will independent study be substituted for regularly scheduled courses. Independent study may be taken for from 1 to 6 semester hours.
Prerequisite: 3.0 cumulative average in the major.

PSY 4920 **3 cr. 3 hr.**
Advanced Psychology Seminar
In this course students will pursue advanced study in their discipline. Students will complete a supervised research report and meet in a weekly seminar to discuss their projects and other research topics and issues.
Prerequisite: PSY 2110, 2120, 3410, MATH 1700.

PSY 4950 **6 cr. 18 hr.**
Internship in Psychology
Through an internship the student experiences the relationship between courses in psychology and their applications in the field. Work is carried on in settings approved by the department, faculty member, and an on-site supervisor. Internships are available in service agencies, business, and industry. Each internship would presuppose specific course back ground. Students are encouraged to discuss internship plans with their advisors early in their college experience. Interested students must contact the Psychology Curriculum Coordinator early in the fall semester of the year in which the internship is desired. Internships are offered only in the spring semester with some direct service internships available during the fall semester as well. Liability insurance is required of all students enrolled in this course.
Prerequisites: 2.5 cumulative average overall and in the major; program approval.

PSY 4960 **12 cr. 36 hr.**
Internship in Psychology
Same description and prerequisites as for PSY 4950.

PSY 5000 **3 cr. 3 hr.**
Topics in Psychology
Courses offered on an occasional, experimental basis, for supplementation and enrichment of program. More than one such course may be taken with permission.

Russian

Chairperson: *Harry Semerjian*
Professor: *John Burke*

Course Offerings

Asterisk indicates that the course may be offered less than once very two years. "C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

RUSS 1000 **3 cr. 3 hr.**
Russian for Beginners I
Correct pronunciation, reading ability, and fundamentals of grammar and syntax. Russian becomes gradually the working classroom and laboratory language.

RUSS 1100 **3 cr. 3 hr.**
Russian for Beginners II

RUSS 2000 **3 cr. 3 hr.**
Intermediate Russian I
Remedial pronunciation, grammar review, conversation, and laboratory practice. Readings stress U.S.S.R. life,

customs, and culture. Russian is the working language.
Prerequisite: Two years of high school Russian or RUSS 1100 and/or Instructor's permission.

***RUSS 2100 3 cr. 3 hr.**
Intermediate Russian II
Continuation of RUSS 2000.

RUSS 2400 3 cr. 3 hr.
Dostoevsky and Tolstoy (in English)
An in depth comparative study of the two giants of Russian I century literature. Contrasts in biography themes and styles. Lectures and readings in English. Standard length paper. Midterm and final examinations. C, IDIS

RUSS 2500 3 cr. 3 hr.
Russian Literature in English Translation
A seminar on a specific topic from Russian literature (eg. Soviet Literature, the modern Russian novel). Lectures and readings in English. Emphasis on significant works in Russian and Soviet literature. Midterm and final examinations and a standard length paper. May be repeated for credit. C, IDIS

RUSS 2600 3 cr. 3 hr.
Russian Culture and Soviet Life (in English)
An introduction to Russian life and culture as manifested in Russian geography, art, music, film, and literature. National characteristics of the Russian people and their influence on Soviet institutions. Everyday life in the Soviet Union. Includes a significant audio-visual component.C, IDIS

RUSS 4901 1 cr. 1 hr.
Independent Study in Russian

RUSS 4903 3 cr. 3 hr.
Independent Study in Russian
Open to students in the language with the permission of the supervising instructor and the Department Chairman. Meeting times and credit by arrangement.

RUSS 5000 3 cr. 3 hr.
Topics in Russian
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Secondary Education (9-12)

Coordinator:
Anne May

Cooperating Professors:
George Babich
Marilyn McCaffrey
Ernest Fandreyer
Robert Champlin
Sibyl Brownlee
Steven Therrien

A Secondary Education Program is offered in the following disciplines for those students seeking provisional teaching certification:

Biology	Earth Science
English	History
Mathematics	

Biology

Requirements: Biology Major

Core Courses

BIOL 2860 Introduction to Secondary School Teaching	3 cr.
ENGL 4700 Teaching Writing in Secondary Schools	3 cr.
BIOL 4850 Special Methods in Biology	3 cr.
BIOL 4940 Biology Practicum in a Secondary School (150 hrs.)	6 cr.

Earth Science

Requirements: Geography Major

Core Courses

GEOG 2860 Introduction to Secondary School Teaching	3 cr.
ENGL 4700 Teaching Writing in Secondary Schools	3 cr.
GEOG 4850 Special Methods in Earth Science	3 cr.
GEOG 4880 Earth Science Practicum in a Secondary School (150 hrs.)	6 cr.
	15 cr.

English

Requirements: English Major

Core Courses

ENGL 2860 Introduction to Secondary School Teaching	3 cr.
ENGL 4700 Teaching Writing in Secondary Schools	3 cr.

ENGL 4850 3 cr.
Special Methods in English
ENGL 4860 6 cr.
English Practicum in a
Secondary School (150 hrs.)

History

Requirements: History Major

Core Courses

HIST 2860 3 cr.
Introduction to Secondary
School Teaching
ENGL 4700 3 cr.
Teaching Writing in Secondary Schools
HIST 4850 3 cr.
Special Methods in History
HIST 4890 6 cr.
History Practicum in a
Secondary School (150 hrs.)

15 cr.

Mathematics

Requirements: Mathematics Major

Core Courses

MATH 2860 3 cr.
Introduction to Secondary
School Teaching
ENGL 4700 3 cr.
Teaching Writing in Secondary Schools
MATH 4850 3 cr.
Special Methods in Mathematics
MATH 4860 6 cr.
Mathematics Practicum in a
Secondary School (150 hrs.)

15 cr.

Technology Education

Requirements

Common Technical Core (24 S.H.)

Manufacturing Cluster

ITEC 1300 3cr.
Wood Fabrication Systems
ITEC 1200 3cr.
Metal Fabrication Systems

Communications Cluster

ITEC 1400 3 cr.
Technical Drawing
ITEC 1500 3 cr.
Graphic Arts Processes

Construction Cluster

ITEC 2400 3 cr.
Architectural Drawing
ITEC 2310 3 cr.
Structures I

Power Energy & Transportation

ITEC 2600 3 cr.
Alternate Energy
ITEC 3600 3 cr.
Advanced Alternate Energy

Professional Sequence (15 S.H.)

ITEC 4840 3 cr.
Prepracticum Seminar
ITEC 3800 3cr.
Methods in Teaching T.E.
ITEC 4860 9 cr.
Practicum in T.E.

External Requirements for all Secondary Ed. Minors:

Liberal Arts and Sciences
Distribution which include:
PSY 2230 Adolescent Psychology

Sociology

Chairperson:
Mary Ann Hanley

Coordinator:
Margot Kempers

Professors:
Augustine Aryee
Harold Melvin

Assoc. Professors:
Patricia Hayes
Margot Kempers

Sociology is a systematic way of making sense of the social world. It is an important and distinctive field of study with refined approaches and methods of research. The sociology major at Fitchburg State College was established in 1973, and was designed to provide students with a broad understanding of the world in which we live. The curriculum has been developed to provide the theoretical background and research skills essential for work concerned with human behavior. Graduates of the program are prepared for immediate entry into a wide variety of occupations in business, education, industry, social service, and public service settings. In addition, many graduates continue formal study by enrolling in advanced degree programs in sociology and related fields.

Sociology is one of the disciplines which make up the Behavioral Sciences Department. Students can pursue a major in sociology (B.A. or B.S. degree) or a minor. Sociology offers supportive courses for a variety of other programs in the college.

The Major in Sociology

The Sociology curriculum is flexible and addresses the needs of those students seeking a general background of sociological knowledge, as well as those desiring to orient their studies around certain subfields in the discipline. The faculty has expertise in the following areas: the Legal System and Criminal Justice; Urban Issues; Socially Structured Inequality; and Social Institutions (including Family, Medicine, Religion, and Organizations). Majors are encouraged to discuss with their advisors the general direction they each would like to pursue at FSC and after graduation, and to work closely with their advisors in building a coherent academic program by drawing on Sociology courses, other Behavioral Science courses, and campus-wide courses. The major requires 36 semester hours of course work in Sociology approved by the faculty advisor. This total includes a core of 12 semester hours and 24 semester hours (8 courses) of electives. Sociology majors must also fulfill the *Speech* requirement (met by successfully completing one of the following courses: Introduction to Speech Communication SPCH 1000, Psychology of Speech and Communication PSY 2160, Public Speaking SPCH 1600) and the *State and Federal Constitution Proficiency* requirement (met by passing a written exam administered by the Department of Social Sciences or by successfully completing one of the following courses: State and Urban Government POLS 1500, United States Government POLS 1000, Civil Rights and Civil Liberties in the United States POLS 3600, Introduction to the Legal Process POLS 2270, United States History I HIST 1400, United States History II HIST 1500.

Majors are encouraged to take advantage of relevant courses from the other two majors in the Behavioral Sciences Department. In completing the major each student is expected to work with a faculty advisor to design a program of studies that will meet his or her individual educational objectives and career goals.

Core Courses

Introduction to Sociology (SOC 1100) is a prerequisite for all other Sociology courses, and students are urged to take this course during their freshman year. Cultural Anthropology (SOC 2250) and Basic Skills of Social Research (SOC 3130) are generally taken during the sophomore or junior years of study. Social Theory (SOC 3160) is recommended for juniors and seniors.

Requirements for the Liberal Arts and Sciences Program

Sociology majors fulfill the following Liberal Arts and Sciences requirements by successfully completing the following courses:

Jr./Sr. Writing, Social Theory (SOC 3160), Listening and Speaking, Intro to Speech Communication (SPCH 1000)

or

Psychology of Speech and Communication (PSY 2160)

or

Public Speaking (SPCH 1600), Computer Literacy, Basic Skills of Social Research (SOC 3130)

Students should prepare themselves to satisfy any specific prerequisites of these courses.

The Minor In Sociology

The minor in sociology consists of 18 semester hours in Sociology. There is a core of nine semester hours including Introductory Sociology (SOC 1100), Basic Skills in Social Research (SOC 3130), and Social Theory (SOC 3160). The remaining nine semester hours may be selected according to student needs and interests.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

SOC 1100 **3 cr. 3 hr.**
Introduction to Sociology
Encourages the student to critically analyze the social world which he or she inhabits. Major theoretical orientations and major concepts of the discipline are reviewed. Social institutions such as Family, Education and Medicine are examined, and different research techniques used by sociologists are introduced. This course is a prerequisite for all other sociology courses. C

SOC 2250 **3 cr. 3 hr.**
Cultural Anthropology
Introduces students to varying cultures. Attention is given to hunting and gathering, pastoral, horticultural, agricultural, and industrial societies. Cultural change imposed by industrialization and technological revolution in both third world and modern societies is also analyzed. The intent is to make student knowledgeable about the development and variability of cultures, living styles, and values, and to ignite students' imaginations to tackle elusive questions of the capabilities, limits, and future of human societies. C

SOC 2440 **3 cr. 3 hr.**
Urban Sociology
This course provides a survey of the origins and development of cities, the anatomy of modern American cities, world urbanization, urban planning, and social change. The focus is primarily on contemporary American urban life.

SOC 2500 **3 cr. 3 hr.**
Race and Ethnic Relations
This course provides a comparative, historical, and interdisciplinary introduction to interactions between racial and ethnic populations in the U.S. Students explore social attitudes and consequences of racial and ethnic difference, and examine how such differences affect the lives of American people. Consideration is given to the political, economic, legal, and sociocultural experiences of several minority groups in American society. C, IDIS

SOC 2520 **3 cr. 3 hr.**
Drugs and Alcohol
In this course, students explore: sociological issues revolving around drug and alcohol use and abuse in the American society; the socio-historical origins of drugs and alcohol use from a cross-cultural perspective; effects of formal organizations such as drug rehabilitation and alcoholic centers on drug users; and "Push factors" such as family, work, and economic pressures, as they relate to chemical dependency. Also investigated are society's drug problems in terms of legal and illegal drug use; medical versus recreational use of psychoactive drugs, alcoholic beverages, and tobacco; and definitions and classifications of psychoactive substances.

SOC 2620 **3 cr. 3 hr.**
Sociology of Religion
Emphasizes the structure and function of religious organizations, beliefs, and practices. Current issues in American religion are also explored.

SOC 2630 **3 cr. 3 hr.**
Sociology of the Family
The structure and function of the family is analyzed. Current trends along with practical solutions to problems of family living are discussed.

***SOC 2650** **3 cr. 3 hr.**
Sociology of Organizations
Introduces the study of work organizations as social systems. The impact of technological change, and the effects of structure factors on organizations are considered. Approaches to organization diagnosis and development are discussed.

SOC 2700 **3 cr. 3 hr.**
Social Problems
The course examines underlying dynamics and consequences of contemporary social conditions believed to be both undesirable and changeable. Strategies for resolving social problems in the environmental, economic, family, medical, political, and legal spheres will be analyzed and compared.

SOC 2720 **3 cr. 3 hr.**
Medical Sociology
In this course, students explore the effects of stratification on health status and health care, communication between physicians and patients of different socio-cultural backgrounds, formal organizational studies of health facilities such as hospitals, clinics or doctors' offices, social factors and their relation to chronic illness and the sociology of mental illness. Also investigated are the relationship between doctors and nurses,

the organization and utilization of health services, the comparative examination of health systems either within a society or in a cross-cultural perspective, and the perception of illness as deviant or aberrant behavior.

SOC 2750 **3 cr. 3 hr.**
Criminology
This course provides a survey of the field of criminology, including such topics as theories of crime; criminal statistics; homicide, rape, property crimes; white collar crimes and corporate deviance; capital punishment, police, courts, and corrections.

***SOC 2760** **3 cr. 3 hr.**
Juvenile Delinquency
This course examines major sociological theories of delinquency including an analysis of empirical studies. Attention will also be given to the juvenile judicial system and proposed treatment programs.

SOC 3000 **3 cr. 3 hr.**
Social Stratification
Provide a cultural examination of the dominant perspectives and means of social stratification, using a cross-cultural, historical, and interdisciplinary framework. Trends in social mobility and status attainment, in the U.S. and in other nations are compared. C, IDIS

SOC 3130 **3 cr. 3 hr.**
Basic Skills of Social Research
Emphasizes the aims and techniques of various research methods as applied to sociological study and practice, including interviewing, observation, questionnaire construction, and quantitative analysis of data. Meets LAS Computer Literacy for Sociology majors.

***SOC 3140** **3 cr. 3 hr.**
Application of Social Research in the Work Setting
Provides a deeper understanding of techniques of social research than SOC 2130. The application of such techniques to consumer behavior, business and government organizations, and social agencies, is examined.

SOC 3160 **3 cr. 3 hr.**
Social Theory
Social philosophy precursors, sociological scientific theorists from Comte to Parsons, and contemporary schools of thought in Sociology are studied. Meets LAS Writing requirement for Sociology majors.
Prerequisite: Two intermediate level Sociology courses, or permission of Instructor.

SOC 3500 **3 cr. 3 hr.**
Law and Society
This course focuses on law as a practical resource, how the availability of law is distributed in society, what the law provides for those who use it and how the law has been influenced by certain trends of use. Students will examine ways in which the law has been analyzed, and will study the nature of legal evolution and social change.
Prerequisites: Two intermediate level sociology courses, or permission of Instructor.

SOC 3770 **3 cr. 3 hr.**
Women in American Society
This seminar course examines the statuses, roles, expectations, and realities of women, particularly as experienced in the contemporary U.S. Patterns and differences among women's lives will be explored through a variety of readings, class discussions, and writing projects. C, IDIS
Prerequisite: Two intermediate level sociology courses, or permission of Instructor.

SOC 4900 **1-6 cr. 3-18 hr.**
Independent Study
A program of study designed with the student to make possible in-depth learning in a specific topic for which no regular course is available. For Sociology majors only. May be taken no more than two times with permission of faculty. Requires approval of the professor and of the Sociology Curriculum Committee.
Prerequisite: 3.0 cumulative average in the major.

SOC 4960 **6 cr. 15 hr.**
Internship in Sociology
Arranged in consultation with faculty and carried out under auspices of an approved agency or program in the community, or a state or federal agency or office. This experience should be of such a nature as to develop skills in sociological practice, principles, and/or research. Students are encouraged to discuss internship plans with their

advisors early in their college experience, as there are specific procedures and required courses. Liability insurance is required of all students enrolled in this course.
Prerequisite: junior or senior Standing, 2.5 cumulative average in the major, program approval.

SOC 4970 **12 cr. 30 hr.**
Internship in Sociology
See SOC 4960 for description and prerequisites.

SOC 5000
Topics in Sociology
Courses are offered on an occasional, experimental basis, for supplementation and enrichment of program. More than one such course may be taken with permission.

Spanish

Chairperson: *Harry Semerjian*
Asst. Professors: *G. Tod Slone*

Associate Professor:
Maria Jaramillo
Jeannette Scharf

The Minor in Spanish

The minor in Spanish will require a minimum of 15 semester hours. Students must take Intermediate Spanish I and II or be able to demonstrate proficiency at that level. Elementary Spanish will not count toward the minor. After demonstrating intermediate level competency, the student may take a combination of courses in Spanish literature, composition, or culture which will yield the requisite 15 hours of credit. For those students starting Spanish above the intermediate level, SPAN 4903 Independent Study in Spanish, may be repeated for credit.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

SPAN 1000 **3 cr. 3 hr.**
Spanish for Beginners I
Correct pronunciation, reading ability, and fundamentals of grammar and syntax. The premise is to teach the student the four language skills of listening, speaking, reading, and writing. Cultural topics are integrated with these skills. Spanish gradually becomes the working classroom language. Students with a year or more of high school Spanish should register for Spanish 2000. C

SPAN 1100 **3 cr. 3 hr.**
Spanish for Beginners II
Continuation of SPAN 1000 or permission of the Instructor. C

SPAN 2000 **3 cr. 3 hr.**
Intermediate Spanish I
A discussion of advanced grammar points and readings dealing with Spanish life. Emphasis will be on developing conversational fluency. C
Prerequisite: SPAN 1000 or permission of the Instructor.

SPAN 2100 **3 cr. 3 hr.**
Intermediate Spanish II
Continuation of SPAN 2000 or permission of the Instructor. C

SPAN 2400 **3 cr. 3 hr.**
Methods for Teaching Spanish in the Elementary School
Techniques and materials for use in elementary school.
Prerequisites: Minimum of 12 semester hours beyond beginner's level and permission of Instructor.

SPAN 2600 **3 cr. 3 hr.**
Hispanic Culture
This course is designed to provide students with a knowledge and understanding of the Hispanic world through a study of the historical and cultural development of different countries with emphasis on contemporary problems and social customs of the Hispanic in the USA. C.
Prerequisite: SPAN 2100 or permission of the Instructor.

SPAN 2700 **3 cr. 3 hr.**
Hispanic Literature
Selected works reflecting the Hispanic heritage in contemporary Spanish and Latin American literature. C
Prerequisite: SPAN 2100 or permission of the Instructor.

SPAN 3500 **3 cr. 3 hr.**
Spanish Conversation and Composition
This course is designed to teach skills that will increase the student's overall ability to read, speak and write the language. Students will be expected to write compositions on topics developed in class.
Prerequisite: SPAN 2100 or permission of the Instructor.

SPAN 4000 **3 cr. 3 hr.**
Practical Spanish for the Public Services Professional I
Spanish or people in public services, human services, nursing, medical technology, special education, with special emphasis upon the cultural and psychological characteristics of Spanish speaking peoples.

SPAN 4100 **3 cr. 3 hr.**
Practical Spanish for the Public Services Professional II
Continuation of SPAN 4000 or Instructor's permission.

SPAN 4901 **1 cr. 1 hr.**
Independent Study in Spanish

SPAN 4903 **3 cr. 3 hr.**
Independent Study in Spanish
Open to students in the language with the permission of the supervising Instructor and the Department Chairman. Meeting times and credit by arrangement.

SPAN 4906 **6 cr. 6 hr.**
Independent Study in Spanish

SPAN 5000 **3 cr. 3 hr.**
Topics in Spanish
Courses having a more narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under this title.

Special Education

Chairperson: *Sandra Miller-Jacobs*
Associate Professor: *Shari Stokes*

Professors:
Katherine Flynn
Elaine Francis
Rosemarie Giovino
Sandra Miller-Jacobs
Anne May
Donald Rapp

Asst. Professor: *Anne Howard*

The Special Education Department at Fitchburg State College offers the oldest and most comprehensive state program in the Commonwealth of Massachusetts. In this program, emphasis is given to content, application, and the ability to use strategies and resources in working with children and adults who have special needs in the least restrictive or inclusive environment.

Our majors enjoy close relationships with each other and interaction with the faculty. The Special Education Club, a student chapter of the professional organization Council for Exceptional Children, offers students the opportunity to grow professionally while meeting students with similar interests

The program has been developed with an underlying belief in mainstreaming and in the potential of individuals with special needs. The program ensures that students are involved, early in their program, with supervised, field based experiences and academic classes to help clarify career decisions and to develop the knowledge, skills, and attitudes to be effective special educators.

All Special Education majors graduate with a dual major in Special Education and Liberal Arts and Sciences (LA&S). The LA&S major is required by the state of all future teachers. Students are advised by academic advisors in both departments.

This program prepares its graduates to be Teachers of Students with Special Needs (N-9) (5-12), Teachers of Students with Visual Impairments (all levels), and Teachers of Students with Intensive Special Needs (all levels). Students preparing to become Teachers of Students with Special Needs and Teachers of Students with Visual Impairments also receive certification as Elementary Teachers.

Programs designed to prepare teachers at Fitchburg State College receive approval from the Commonwealth of Massachusetts to recommend a certificate of eligibility for graduates who have successfully completed a program of study. The certificate is valid for five years of employment in the public schools of Massachusetts.

All special education candidates must satisfy the Constitution requirement of the Commonwealth of Massachusetts. See, "Common Graduation Requirements..."

To enroll in student teaching (Integrated Professional Practicum) the candidate must have a 2.5 cumulative average for all Special Education courses, completed General Psychology, Children's Literature, Child Psychology, Learning Theory and Its Application, Adolescent Psychology (5-12 only), and receive a positive recommendation from the faculty of the Special Education Department.

The Major in Special Education

Teachers of Students with Special Needs (N-9 or 5-12)

This program prepares special educators to teach individuals with cognitive, emotional, social, language, and academic problems who are integrated into classrooms or are in self-contained classrooms in public or private schools. Our graduates develop the knowledge, skills, and attitudes necessary to work with students experiencing learning and behavioral problems. In addition, students in this program meet the certification standards of the State Department of Education for Elementary Teacher.

Required Courses

SPED 2100 3 cr.
Introduction to Individuals with Special Needs

SPED 2521 3 cr.
Teaching Children with Special Needs

SPED 3900 3 cr.
Language Development and Speech

SPED 3500 3 cr.
Behavior Management

SPED 4050 3 cr.
Assessment and Program Development for Children with Special Needs

Integrated Professional Track

SPED 3655
Integrated Curriculum 5 cr.

A. Content
Reading/Language Arts/Learning Problems
Social Studies/Science
Mathematics Assessment
Computers in the Curriculum
Drug Education

B. Field Experience
(Supervised by College Faculty and Cooperating Practitioner)

SPED 3665 5 cr.
Integrated Professional Practicum: Elementary
6 weeks (150 hours)

SPED 3675 5 cr.
Integrated Professional Practicum: Special Educator
6 weeks (150 hours)

SPED 3655, 3665 and 3675
Integrated Professional Practicum: (Teacher of Students with Special Needs) N-9; 5-12

The Integrated Professional Track involves a 15 credit block of theoretical courses and teaching in a public school setting. The courses and seminars address the content areas: Reading/ Language Arts/Learning Problems, Social Studies/Science, Mathematics Assessment, Computers and Drug Education. This content is covered in full day classes (8:30-3:30) during the first three weeks of the semester. For the remainder of the semester students are in the elementary schools in regular class settings where children with special needs are integrated (6 weeks) and within public schools (6 weeks). Students spend four days in the settings teaching all aspects of the curriculum. One day a week (8:30-3:30) students attend classes. There is continuous integration of theory and application. Throughout this semester students receive support by college faculty and cooperating teachers.

Weeks 1-3 full day seminars
Weeks 4-15 4 full day practicums; 1 full day seminar

Placement: 6 weeks with an elementary teacher and 6 weeks with a special needs teacher.

Total Credits in this Programs

*Students desiring provisional certification at the secondary level do field experience prior to the Integrated Practicum with secondary age children in a high school setting. In the Integrated Practicum they are placed in middle schools or in upper elementary grades in elementary schools.

External Requirements

Liberal Arts and Sciences Distribution which include:
- PSY 1000 General Psychology
- PSY 2100 Child Psychology
- PHIL 2000 Philosophy of Education
- PSY 2710 Learning Theory and Its Application
- ENGL 2900 Children's Literature
- GEOG 1000 Introduction to Geography
- PSY 2230 Adolescent Psychology

Teachers of Students with Intensive Special Needs (All Levels)

This program addresses the needs of individuals who have severe learning problems, often with accompanying physical, emotional and behavioral disorders. Therefore, curricula focuses on teaching independent living skills so that children and adults can live as independently as possible in home, school and community environments.

Required Courses

SPED 2201 3 cr.
Introduction to Individuals with Special Needs

SPED 2201 3 cr.
Program Development for Students with Intensive Special Needs

SPED 2521 3 cr.
Teaching Children with Special Needs

SPED 3000 3 cr.
Language Development and Speech

SPED 3500 3 cr.
Behavior Management

Integrated Professional Track ***15 cr***

SPED3655 7 cr.
Integrated Curriculum

A. Content
Reading/Language Arts/Learning Problems
Social Studies/Science
Mathematics Assessment
Computers in the Curriculum
Drug Education

B. Field Experience
(Supervised by College Faculty and Cooperating Practitioner)

SPED 3665 5 cr.
Integrated Professional Practicum: Elementary

6 weeks (150 hours)

SPED 3765 15 cr
Integrated Professional Practicum: Intensive

6 weeks (150 hours)

SPED 3655, 3665 and 3765
Integrated Professional Practicum: (Teacher of Students with Special Needs: Intensive) All levels.

This 15 credit block includes theoretical study and application of behavior management principles; assessment and curriculum development in language, motor, social, recreational and self care areas of the curriculum. These topics are covered in full day seminars (8:30-3:30) during the first 3 weeks of classes. Content seminars are conducted once a week for the following twelve weeks of the semester. After attending 3 weeks of seminars, students participate in a four day a week, full day practicum for the following twelve weeks.

Schedule of Integrated Programs
Seminars/Practicum work:
Weeks 1-3 Full day Seminars
Weeks 4-15 Four day a week Practicum, 1 full day seminar

External Requirements

Liberal Arts and Sciences Distribution which include:
- BIOL1200 Anatomy and Physiology
- PSY 1000 General Psychology
- PSY 2100 Child Psychology
- ENGL 2900 Children's Literature
- GEOG 1000 Introduction to Geography

PSY 2230 Adolescent Psychology
PHIL 2000 Philosophy of Education
PSY 2710 Learning Theory and Its Application
Liberal Arts or Science Major

Teacher of Students with Visual Impairments (All Levels)

The didactic and field experiences develop the knowledges, competencies, and attitudes necessary for effective delivery of direct and indirect services to visually impaired students who are in integrated programs (resource room and/or mainstream settings in public or private schools). In addition, the program prepares the students to meet the certification standards of the State Department of Education for Elementary Teacher.

Required Courses

SPED 2100 3 cr.
Introduction to Individuals with Special Needs

SPED 2521 3 cr.
Teaching Children with Special Needs

SPED 2801 3 cr.
Eye and Vision

SPED 2951 3 cr.
Curriculum Development and Adaptations

SPED 4050
Assessment and Program Development for Children with Learning Problems

Integrated Professional Track

SPED 3655
Integrated Curriculum 5 cr.

A. Content
Reading/Language Arts/Learning Problems/Social Studies/Science
Mathematics Assessment
Computers in the Curriculum
Drug Education

B. Field Experience
(Supervised by College Faculty and Cooperating Practitioner)

SPED 3665 5 cr.
Integrated Professional Practicum: Elementary 6 weeks (150 hours)

SPED 3685 5 cr.
Integrated Professional Practicum: Vision6 weeks (150 hours)

*Students will complete vision practicum requirements in Massachusetts Public School Programs, collaborative programs (inter-district), or private residential programs such as Perkins School for the Blind.

SPED 3655, 3665 and 3685
Integrated Professional Practicum (Teacher of the Visually Impaired–All Levels)

The Integrated Professional Practicum involves a 15 credit block of theoretical courses and teaching in a public school setting. The courses and seminars address the content areas: Reading/Language Arts/Learning Problems, Social Studies/Science, Mathematics Assessment, Computers and Drug Education. This content is covered in full day classes (8:30-3:30) during the first three weeks of the semester. For the remainder of the semester students are in the elementary schools in regular class settings integrated (6 weeks) and in special settings servicing students who are visually impaired (6 weeks). Students spend four days in the settings teaching all aspects of the curriculum. One day a week (8:30-3:30) students attend classes. There is a continuous integration of theory and application. Throughout this semester students receive support by college faculty and cooperating teachers.

Weeks 1-3 Full day seminars
Weeks 4-15 4 full day practicums
1 full day seminar

Placement: 6 weeks with an elementary teacher and 6 weeks with a teacher of the visually impaired

Total credits in this program

External Requirements

Liberal Arts and Sciences Distribution which include:
PSY 1000 Introduction to Psychology
PSY 2100 Child Psychology
PHIL 2000 Philosophy of Education
PSY 2710 Learning Theory and Its Application
ENGL 2900 Children's Literature
GEOG 1000 Introduction to Geography
PSY 2230 Adolescent Psychology
Liberal Arts or Science Major

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

SPED 2000 **3 cr. 3 hr.**
Nature and Needs of the Young Child with Special Needs
Basic handicapping conditions as they affect children from birth to seven years will be reviewed with a focus on educational programming.

SPED 2100 **3 cr. 3 hr.**
Introduction to Individuals with Special Needs
Focuses on the characteristics, behavioral, social and learning needs of exceptional children and adults: the total special education delivery system; controversies and issues in the field, relevant state and federal legislation and court cases. (Observational field experience required).

SPED 2201 **3 cr. 3 hr.**
Program Development for Students with Intensive Special Needs
An overview of handicapping conditions and service delivery models for students with intensive special needs are addressed. Effective teaching strategies and curriculum development are the major focus.

***SPED 2500** **3 cr. 3 hr.**
Drugs and Schooling
A study of the history of drug use and abuse among school age children and adults.

SPED 2510 **3 cr. 3 hr.**
Identification and Diagnosis of Young Children with Learning Problems
Students will analyze the learning process in terms of physiological, cognitive, social, and language development and deviations. They will also administer evaluative measures, plan instruction, write an IEP. Weekly pre-practicum required.

SPED 2521 **3 cr. 3 hr.**
Teaching Children with Special Needs
Addresses basic concepts and issues in assessing children with special needs and in analyzing what to teach. Pre-service teachers are provided with a set of tools for observing and recording behavior of children and for measuring children's progress from day to day. The course explains the development of instructional objectives based on evaluation procedures and demonstrates various teaching and management approaches used with children with special needs. Students write lesson plans, design and make materials for use in classroom settings and develop learning centers. Finally, the course includes procedures for developing IEP's and the process for implementation. (Field experience required).

SPED 2801 **3 cr. 3 hr.**
Eye and Vision
This course will provide the special educator in vision with knowledge concerning anatomy and physiology of the eye, visual development, eye disorders ranging from mild to total vision loss, and educational and psychological implications. Other topics covered are: low vision aids, mobility devices, self-help skills, and vision screening. Interpretation of doctors' eye reports to school personnel and parents will be covered.

SPED 2951 **3 cr. 3 hr.**
Curriculum Development and Adaptations
This course will provide instruction in reading and writing Standard English Braille, Nemeth Code for braille math, and use of the abacus. The student will be introduced to current technology computers, word processing, braille embossers, and software. Curriculum adaptations for academic subjects, listening skills, typing, teaching of visual efficiency, daily living/social skills, functional orientation and mobility skills in the school, and instructional materials will be covered. Consultation strategies to provide information and support to students, families, school personnel, community resources, and related service providers will be included.

SPED 3000 **3 cr. 3 hr.**
Habilitation and Rehabilitation of the Special Child
An analysis of the adaptive problems of the handicapped as they affect and effect society.
Fall semester.
Prerequisite: Integrated Program (SPED 3650-3660).

***SPED 3100** **3 cr. 3 hr.**
Early Learning Experiences for Exceptional Children
Emphasizes a developmental approach to working with young children with special needs. Practicum is required.

***SPED 3200** **3 cr. 3 hr.**
Alternative Programs in Special Education
Designed to prepare students with the skill necessary to function in alternative programs for persons with special needs, from birth to adulthood.
Prerequisites: Integrated Program (SPED 3650, 3660).

SPED 3250 **3 cr. 3 hr.**
Seminar in Special Education: Microcomputers
Provides students with the knowledge and experience necessary to use microcomputers with individuals with special needs.
Prerequisite: SPED 2520 or permission of Instructor.

SPED 3300 **3 cr. 3 hr.**
Current Issues in Special Education
Designed to assist students in Special Education to gain a broad perspective on the aspects of controversy and change which are influencing the profession.
Prerequisites: SPED 2000, 2100, 2200.

SPED 3401 **3 cr. 3 hr.**
Language Development and Speech
Addresses the normal development of speech, language and hearing and disorders associated with each of these areas of communication. Students demonstrate a knowledge of articulation problems and types of hearing losses and their effects on academic learning. In the area of language disorders students demonstrate an understanding of delayed language and language disabilities as they relate to reading, mathematics, and written language. Students analyze second language acquisition and educational practices related to linguistic minority students. (Field experience required).

SPED 3501 **3 cr. 3 hr.**
Behavior Management
Prepares students to implement a variety of behavior management techniques. Emphasis is on the development of a positive problem solving approach to manage academic and social/emotional behaviors. Consideration is also given to developing an awareness of the teacher's behavior and its effect on the behavior of children.

SPED 3655 **5 cr.**
Integrated Curriculum
This course is taken as part of the 15 credit block of the Integrated Professional Program: Special Educator. These seminars include content in the areas of: Reading/Language, Arts/Learning Problems, Social Studies/Science, Mathematics Assessment, Computers in the Curriculum, and Drug Education.

SPED 3660 **6 cr.**
Practicum Level I
Student spends 6 weeks at the same elementary school as above in an elementary teaching experience on a full-day basis. SPED 3650 and SPED 3660 are taken during the same semester.

SPED 3665 **5 cr.**
Integrated Professional Practicum: Elementary
Students spend six weeks in an elementary school in classrooms where special needs students are integrated or included. The college student teaches all aspects of the curriculum and assumes the role of classroom teacher.

SPED 3675 **5 cr.**
Integrated Professional Practicum: Special Educator (N-9)
Students spend six weeks in the role of a special educator servicing children with special needs (N-9). These children may be serviced in reference rooms, in integrated programs, or in inclusive classrooms. In this role, students are responsible for assessing children's performance, direct teaching, and evaluation. As the role of the special educator varies in schools, this experience will reflect this changing role.

SPED 3675 **5 cr.**
Integrated Professional Practicum: Vision
Students will assume the role of a teacher of the visually impaired. Students will work in public school programs, collaborative programs (inter-district), or private residential programs such as the Perkins School for the Blind.

SPED 3765 **5 cr.**
Integrated Professional Practicum: Intensive
Students will assume the role of a teacher of students with intensive special needs. Students will work with individuals on functional academics and managing behaviors. They will develop and implement instructional programs in the curriculum areas of language, motor, social/recreational and self-care. There is a philosophical belief in the importance of including individuals with intensive special needs in schools and communities which underlies the development of instructional programming.

SPED 3800 **3 cr. 3 hr.**
Secondary Programs for Adolescents (14-22) with Special Needs
Student will attend lectures, complete readings, and participate in discussions related to academic programming for adolescents between the ages of 14 to 22 in a variety of educational settings. Offered: fall semester.
Prerequisites: SPED 2100, 2200.

SPED 3840 **6 cr.**
Practicum -Teacher of Children with Severe Special Needs
Students participate in an sixteen-week full day practicum in a classroom for individuals with severe special needs. Offered: fall semester.
Prerequisite: Integrated Program for Severely and Multiply Handicapped.

SPED 3860 **6 cr.**
Practicum Level II (Elementary Placement)
Student assumes complete classroom responsibility guided by the cooperating practitioner and the college supervisor. Students receive certification as elementary teachers (1-6).

SPED 3870 **6 cr.**
Practicum Level III (Moderate Special Needs Placement)
Student assumes complete responsibility guided by the cooperating practitioner and the college supervisor. Students receive certification as Teachers of Children with Moderate Special Needs (N-9) (5-12). Students seeking certification (5-12) must be assigned to a secondary level resource room and must have completed SPED 3800 and PSY 2230 prior to Practicum Level III.

SPED 3880 **6 cr.**
Practicum (YCSN)
Students gradually assume full responsibility as head teacher for the operation of the classroom to which they are assigned. Students receive certification as Teacher of Young Children with Special Needs (3-7).

SPED 3890 **6 cr.**
Practicum (Vision Placement)
Students gradually assume complete responsibility for classroom planning, teaching and evaluating lessons, and working with staff. Guidance is provided by the cooperating teacher and supervisor. Students receive certification as Teacher of the Visually Impaired (N-12).

SPED 4001 **3 cr. 3 hr.**
Assessment and Program Development for Children with Special Needs
Focuses on the theories of perceptual, motor, language, emotional, and academic disorders of children; identifies and analyzes screening and diagnostic procedures. Students administer criterion referenced and norm-referenced assessments to children suspected of having learning/behavior problems, analyze results and set goals, specify objectives, instruct and measure behavior.

***SPED 4050** **3 cr. 3 hr.**
Issues in Mainstreaming
Issues will be applied to the public school system as they relate to the special needs child. Elem. majors only.

SPED 4100 **3 cr. 3 hr.**
Teaching Strategies for the Severely Handicapped
Assessment, planning and program development are reviewed. A weekly practicum is required.
Prerequisites: SPED 2100, 2000, (YSCN).

SPED 4200 **3 cr. 3 hr.**
Strategies for Teaching the Visually Impaired
Covers the foundations of education for the blind and visually impaired. Offered: fall semester.
Prerequisites: SPED 2100, SPED 3700, SPED 4710, SPED 4720.

SPED 4300 **3 cr. 3 hr.**
Children and Adolescents in Conflict
Examined are existing models of childhood and youth disturbance as they apply to educational programming for students in conflict.

***SPED 4600** **3 cr. 3 hr.**
Problems in Language Arts for Special Education
Students identify, develop, use resources related to classroom problems in language areas.

SPED 4680 **3 cr. 3 hr.**
Group Processes and Counseling
Designed for special education majors and provides an overview of the counseling process with handicapped students and adults, including introduction to group processes applied to various disabilities.
Prerequisites: SPED 2100, 2200, or consent of Instructor.

***SPED 4690** **3 cr. 3 hr.**
Community Resources for the Exceptional Child
Identification of agencies, practices and personnel, development of models, simulation of roles and production of a guide.

SPED 4700 **3 cr. 3 hr.**
Contemporary Issues in Multicultural/ Bilingual Education
Focus is on the values, life styles and customs of culturally diverse and linguistically different children. Offered: spring semester.
Prerequisites: SPED 2100.

SPED 4710 **3 cr. 3 hr.**
Reading and Writing Braille and Mathematics
Student will develop skill in reading Standard Literary Braille, as well as the teaching of Braille from reading readiness to adult level. Offered: fall semester.
Prerequisite: SPED 2100. This course is open to a limited number of students.

SPED 4730 **3 cr. 3 hr.**
Methods for Teaching Multicultural/ Bilingual Students
Covers various teaching models, identification and analysis of learning styles, skills and needs of bilingual multicultural students. Offered: fall semester.
Prerequisites: SPED 2100, 2200, 2520.

SPED 4900 **3 cr. 3 hr.**
Independent Study
Review, development, and synthesizing of a problem in special education. Open to juniors and seniors with permission of Instructor.

SPED 5000 **3 cr. 3 hr.**
Topics in Special Education
Provides an opportunity for students to identify, review the literature and discuss some of the critical issues affecting the field of special education. The topic is selected by the Instructor.

Speech/Theatre

Chairperson: *Irene Harris*
Assoc. Professor: *Robert Welch*

Professor: *Irene Harris*

The Minor in Theatre

The Theatre Minor requires a minimum of 15 semester hours, including Introduction to Theatre (SPCH 4150), and at least 3 of the following courses:

SPCH 4250 Stagecraft and Theatre Production;
SPCH 4300 Mime and Movement in Theatre or
PHED 4050 Art of Dance;
SPCH 4350 Acting or
PE 4130 Making Dances;
SPCH 4400 Directing the Play; and at least 1 of the following courses:

ENGL 3000 World Drama
ENGL 3020 Modern Drama
ENGL 4020 Shakespeare's Drama or
ENGL 4030 Shakespeare's Thought

Three hours of a theatre internship may also count toward the minor.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

***SPCH 0100** **1 cr. 1 hr.**
Speech Improvement
This is a remedial course. Students are assigned after diagnosis and recommendations of need for speech improvement with individual and group therapy.

SPCH 1000 **3 cr. 3 hr.**
Introduction to Speech Communication
Theory and practice of interpersonal and public communication, including communication theory, self-concept, perception, language, listening, non-verbal communication, and public speaking.
Meets General Education speech requirement.

SPCH 1100 **3 cr. 3 hr.**
Argumentation and Debate
Projects emphasizing analysis, research, evidence, strategies, briefing, refutation, and the delivery of debates on representative questions.
Meets General Education speech requirement.

SPCH 1200 **3 cr. 3 hr.**
Business and Career Communication
Theory and methods of communication applied to business and career problems. Emphasis on skills especially important to students planning to work for or with an organization. Interviewing, group conferences, and staff presentations are emphasized.
Meets General Education speech requirement.

SPCH 1300 **3 cr. 3 hr.**
Effective Speaking for the Electronic Media
Focus on a variety of speaking experiences encountered by those who plan to use electronic media in their occupation. For students who anticipate speaking roles in industry-made productions as well as those who aspire to careers as professional broadcasters.
Meets General Education speech requirement for those majoring in Communications/Media.

SPCH 1400 **3 cr. 3 hr.**
Discussion and Conference Techniques
The fundamentals of group discussion in private and public settings, emphasizing group structure, leadership, and interpersonal relationships, including extensive practice in varied group situations. *Meets General Education speech requirement.*

SPCH 1600 **3 cr. 3 hr.**
Public Speaking
The development of skills and strategies employed in the preparation and presentation of the public address. Critical assessment of rhetorical strategies used by public figures.
Meets General Education speech requirement.

***SPCH 2100** **1 cr. 1 hr.**
Intercollegiate Debate and Forensics
Opportunities for study and participation in debate and forensic speaking activities.

***SPCH 2400** **3 cr. 3 hr.**
Voice and Articulation
The elements of vocal production and presentation, with special emphasis on the study and application of phonetic theory.
Meets General Education speech requirement.

SPCH 2600 **3 cr. 3 hr.**
Persuasion
A study of the causes of listener belief and action, with special emphasis on the development of strategies to influence listener behavior.
Meets General Education speech requirement.

***SPCH 2800** **3 cr. 3 hr.**
Rhetorical Criticism
An exploration of approaches to the rhetorical criticism of significant speeches and speech movements, past and present.

SPCH 4150 **3 cr. 3 hr.**
Introduction to Theatre
An introductory course, surveying theatre: its history, focuses, practices and major practitioners (directors, actors, scenic designers), emphasizing historical and social contexts. C

***SPCH 4200** **3 cr. 3 hr.**
Children's Theatre
An introductory course in theatre for children, its principles and practices, covering aspects of play production for juvenile audiences: script selection and evaluation, directing, acting, and staging techniques.

***SPCH 4250** **3 cr. 3 hr.**
Stagecraft and Theatre Production
In a laboratory situation, the student will take one selected play from initial sketches through to the finished model and plans for production, including design, set building, costuming, lighting, and management.

***SPCH 4300** **3 cr. 3 hr.**
Mime and Movement
This workshop-oriented course utilizes the basic techniques of theatrical mime and movement with emphasis on developing each student's potential for effective physicalization on stage.

SPCH 4350 **3 cr. 3 hr.**
Acting
Acting fundamentals of stage speech and movement, creative mime and improvisation. Plays read and analyzed. Systematic technique building and scene study heavily emphasized.

SPCH 4400 **3 cr. 3 hr.**
Directing the Play
A lecture/seminar/workshop in the basic elements of style/blocking/organization/ focus.

SPCH 4903 **3 cr. 3 hr.**
Independent Study
For exceptional students excelling in scholarship upon approval of department head and advising instructor. Course of study, meetings, and credit by arrangement.

***SPCH 5000** **3 cr. 3 hr.**
Topics
Courses having a narrow focus or those taught on an irregular basis may be offered. New courses may be taught on an experimental basis under the title.

Women's Studies

Chairpersons:
Edmund Thomas
Mary Ann Hanley
Irene Harris

The Minor in Women's Studies

The minor in Women's Studies includes the Introduction to Women's Studies and five other courses including independent study, selected from those approved for Women's Studies. The following courses have been approved for the minor.

Course Offerings

Asterisk indicates that the course may be offered less than once every two years.
"C" designates multicultural courses; "IDIS" designates interdisciplinary courses.

IDIS 1000 **3 cr. 3 hr.**
Introduction to Women's Studies
A cross-cultural, historical and interdisciplinary introduction to topics and themes in women's experiences including roles in the family, the work force and public life. C, IDIS

Women and Literature **3 cr. 3 hr.**
(See ENGL 2900)

IDIS 1100 **3 cr. 3 hr.**
Women in Latin America
A multicultural and interdisciplinary examination of the social, political and economic situation of contemporary Latin American women using autobiographies, literature, and films.

IDIS 2340 **3 cr. 3 hr.**
Women in American Society
A multicultural and interdisciplinary examination of the statuses, roles, expectations and realities of women in society with emphasis on the U.S.
C, IDIS

IDIS 2340 **3 cr. 3 hr.**
Contemporary Issues in Women's Health
A multicultural and interdisciplinary examination of women's health issues including violence against women, sexual freedom, abortion, menopause, work place risks, and problems of poor, elderly women. C, IDIS

History of U.S. Women to 1870 **3 cr. 3 hr.**
(see Hist 2450)

History of U.S Women from 1870 to the Present **3 cr. 3 hr.**
(see Hist 2500)

History of Women in Europe **3 cr. 3 hr.**
(see HIST 3450)

Psychology of Women **3 cr. 3 hr.**
(see PSY 2250)

IDIS 4903 **3 cr. 3 hr.**
Independent Study in Women's Studies

Women, Art and Society **3 hr. 3 cr.**
(see ART 1830)

IDIS 5000
This course serves as a vehicle for curriculum experimentation and enrichment. Topics will be selected by the instructor, usually from work in progress.

Topics in Women's Studies **3 cr. 3 hr.**

Student Support Services

The Advisor

Your faculty advisor is a critical person for you during your years at Fitchburg State College. All students are assigned an advisor. If you are enrolled in a major, your advisor will be a faculty member in the department of the student's major. Your advisor is your primary resource in the planning of your course schedule each semester. But beyond this, you are encouraged to consult with your advisor at any time regarding any problem or concern involving your academic program. All faculty must have at least three office hours each week during which they are available to their students. These hours are posted at the Department offices and are also available through the Office of Academic Affairs.

Students who have not officially declared a major are advised by faculty in the Humanities, Physical Education and Geo/Physical Sciences departments for their freshmen and sophomore years or until they decide on a major.

Academic Advising Center

The Academic Advising Center is staffed by regular full-time faculty chosen for their specific expertise in assisting students to make the best possible use of their academic experience. The Center, located on the first floor of Thompson Hall, is open when classes are in session. While students have faculty advisors in their major departments, the Advising Center specializes in assisting undeclared students, non-traditional students, students experiencing academic difficulty, and students needing help in interpreting specific academic regulations. In addition to the faculty advisors, the Advising Center staff includes a secretary and part-time staff who assist students by answering general questions and by distributing the Center's informational handouts on various subjects. The Academic Advising Center is supervised by the Dean of Curriculum and Instruction.

Academic Success Center

The College maintains an Academic Success Center which is comprised of a group of centers whose purpose is to assist those students who wish to increase their proficiencies in reading, writing, or mathematics; or who wish to sharpen their overall study skills. The Center is located on the third floor of the Hammond building.

Mathematical Skills Center

The Mathematical Skills Center, under the direction of the Mathematics Department, provides peer tutoring to all college students on a drop-in basis. Assistance is available in most areas of mathematics, from arithmetic to calculus.

Reading Center

The Reading Center offers programs designed to meet the individual needs of all students. The Center has enrichment programs for slow readers with good comprehension who want to increase their speeds, and programs for students who want to build stronger vocabularies, in addition to comprehension exercises to help students better understand what they read. All students are taught how to adjust their reading speeds to meet their own particular needs.

Study Skills Center

The Study Skills Center offers programs for students wishing to review or sharpen their study skills, as well as programs for students who wish to develop a system of successful college-level study practices. The program consists of time management, listening and note taking, concentration and memorization, and test-taking skills.

Undeclared Student Program

The Undeclared Student Program assists students in their pursuit of declaring a major. (Students can work with Career Counseling's Sigi Plus Computer which matches a student's interests, values, and skills with specific occupations as well.) A "Gold Card" is offered to students who are then allowed to sit in on classes of their choice to see if a particular area of study interests them.

Writing Skills Center

The English Department operates the Writing Skills Center, which is staffed by both faculty and peer tutors, and where students may get help for all types of writing problems, from planning to punctuation to proofreading. Any instructor at the College may refer a student to the Center, and any student who desires to take advantage of the many programs and materials available there may do so by simply applying.

Peer Advising Program

The Peer Advising Program provides students with coordinated academic support services, motivation and relaxation techniques, and, at times, a helping hand or a shoulder to cry on when the student needs help in the academic environment.

PASS (Peer Assisted Study Sessions

Academic support is available for many of the freshman and introductory level courses. Students who need help preparing for exams, quizzes, and homework assignments are invited to drop in during the posted times. Peer Assistants will provide guidance for note-taking, study strategies, organizational skills, and will facilitate the development of study groups. A listing of the courses being supported each semester is available from the Academic Success Center. Announcement in classes will be made by faculty teaching the selected courses.

ACCESS Program

The ACCESS Program is an academic support program designed for students who possess the motivation and academic potential to receive a college education, but have been denied access to a quality education because of economic and/or educational disadvantages. The philosophy is "achievement against the odds," and the focus is the education and graduation of Fitchburg State College students.

Students admitted to the program receive supportive services in developmental reading, writing, mathematics, and study skills. Tutoring is available in a wide variety of academic subjects by tutors who are selected from among the highest achieving, most caring members of the student body. The ACCESS staff maintains an open door policy for academic counseling and advising. Through referrals, the staff involves students with many other college faculty and counselors who possess the special skills to help students cope with academic, financial, social, and personal concerns.

Applicants must meet certain additional qualifications. They must be residents of Massachusetts and must meet one of the following requirements: attended an urban high school; participated in a support service program such as Upward Bound, METCO, Talent Search, or Educational Opportunity Center; receive public assistance; live in public housing; or be a member of one of the underrepresented ethnic groups such as Black (people of African descent), Latino (Puerto Rican, Mexican, Cuban, etc.) Asian (Chinese, Cambodian, Korean, etc.) or Native American.

The ACCESS Office also serves as a resource to the College community on various issues such as minority student development and African American History Month. The staff serves as resource persons for the following student organizations in which large numbers of minority students are involved:

The Black Student Union
The International Student Union
The Hispanic Student Union
The Iota Phi Theta Fraternity, Inc.
The Phi Beta Sigma Fraternity, Inc.
The True Victory Gospel Choir
The Society Organized Against Racism
The Zeta Phi Beta Sorority, Inc.

In applying to the college, students interested in the ACCESS Program should answer "yes" to the questions about the ACCESS Program on the admission's application and complete all the other questions. The College encourages students and parents to visit the campus and talk with the Director about the program. The ACCESS Office is located in Room 309 in the Hammond Building and the telephone extension is 3399.

International Education Office

Support for those international students attending Fitchburg State College is part of the responsibility of the International Education Office. Services offered include assisting international students in their transition to college, sponsoring cultural awareness programs, and assisting students with the necessary paperwork and communications with the United States Immigration Service. The Office of International Education is located in Room 227, Sanders Administration Building and the telephone extension is 3599. The hours are 8:30 a.m. to 5:00 p.m. weekdays.

Disabilities Services

Fitchburg State College invites and serves students with a variety of disabilities; appropriate support services for such students are provided. Students are individually assessed for the accommodations needed and services are provided that promote equal academic success. Workshops are conducted in the adaptive computer laboratory. Students are trained on the software based on their individual needs. Disabilities Services and The Adaptive Computer Lab are located on the 3rd floor of the Hammond Building, Room 305/306. Students with disabilities are encouraged to stop by early in the semester to fully use the support services available. Contact extension 3427 for more information.

Career Services

The Career Services Center provides a variety of programs and activities to assist students in their career development. Students are encouraged to increase both their self-understanding and their effectiveness in making and implementing career decisions. The Center offers appropriate services for all stages of a student's career development at FSC, from selecting a major in the early years to job hunting and preparing for professional interviews in the senior year.

Among the services provided are career counseling, vocational testing, seminars, workshops, and outreach programs on career planning and job search strategies, and resume and interviewing critiques. Sigi Plus, a computerized career exploration system, is available for students' use. Seniors may participate in the on-campus interviewing program.

Within the Center is housed the Career Services Library. This extensive collection of career information includes descriptive literature on many careers, company and organizational directories, graduate school guides, and labor market information. Handouts are available on a variety of career exploration and job search topics. An alumni network provides students with the opportunity to contact professionals working in a particular field.

The FSC Job Bulletin, a biweekly publication of the Center, lists current full-time professional job vacancies at both the entry and more experienced levels. Listings of local part-time positions are also maintained. A regular newsletter called *The Career Connection* highlights upcoming activities and other career information.

Several national programs of standardized testing are administered through the Center including the Graduate Record Examination (GRE), College Level Examination Program (CLEP/DANTES), Miller Analogies Test (MAT), and the National Teachers Examination (NTE).

The Career Services Center is open to all matriculating Fitchburg State College students and all alumni. The Center is located on the third floor of the Hammond Building and is open from 8:30 am to 5:00 pm weekdays. Students may stop in during these hours to use the resources or may make appointments for career counseling or other services by calling extension 3151.

Counseling Services

Counseling Services provides confidential short-term counseling services to all full time undergraduate students at no charge. Psychotherapists are available for individual counseling, group and couples counseling, crisis intervention, educational programming, outreach workshops, community referrals, and inservice training.

Counselors are frequently consulted for a number of reasons including:

- Coping with loss
- Relationship concerns
- Loneliness/home sickness
- Lack of self confidence
- Inability to concentrate
- Family problems
- Sexuality issues
- Academic difficulties
- Feelings of depression, anxiety and/or insecurity
- Roommate difficulties
- Alcohol/drug abuse
- Stress
- Sexual abuse
- Developing healthier habits
- Spiritual growth

Groups offered by the Counseling Center include Adult Children of Alcoholics, Survivors of Past Sexual Trauma, Relationship Issues, Womens Support Group, Stress Management, Mediation, Eating Disorders, Assertiveness, and Self Esteem.

The Counseling Center is located on the third floor of the Campus Center. The hours are 8:30 am to 5:00 pm, Monday through Friday, as well as selected evening hours by appointment. Appointments can be made by students in person or over the telephone. Students can see a counselor without an appointment

during the daily drop-in time, which is from 2:00 p.m. - 3:00 p.m. Drop-in visits are usually 15-20 minutes and can be used for evaluation, to discuss programming, to obtain a referral to a therapist off campus, or to just talk something over with a counselor.

After Hours: Students requiring services after hours should contact their Resident Assistant and/or Residence Director.

Health Services

Health Services provides ambulatory care and health education/promotion. Services include: emergency care of acute illness and injury; evaluation, treatment, and/or referrals; immunization programs; preventative care; and allergy injections in conjunction with the student's own physician.

Health care is given by nurse practitioners and a consulting physician. The physician attends the clinic during the week at scheduled times. He is also available by telephone consult.

Some equipment is available to borrow on a limited first-come, first-serve basis. A laboratory facility is available for minor tests free of charge. Outside laboratory services are available for a fee.

Health Services is located in the Anthony Building, (opposite Public Safety in the quad). Clinic hours are 8:00 am to 6:00 pm Monday through Thursday, and Friday 8:00 am to 4:00 pm. Walk-in hours are available daily or students may schedule appointments.

McKay Curriculum Resource Center

The McKay Curriculum Resource Center provides education students and faculty assistance in the research and development of curriculum materials, motivational tools, evaluation and assessment devices. The Center houses textbooks, instructional aids, media materials, and computer software which may be used in the classrooms at the elementary and secondary levels.

Child Development Center

The Fitchburg State College Child Development Center is an Early Childhood Program designed to meet the child care needs of the College community. The goal of the program is to provide warm, loving care in a center-based program meeting the "Standards and Areas of the National Academy of Early Childhood Programs." The program is licensed by the Massachusetts Office for Children, and is located in the McKay Campus School Teacher Education Center. The Child Development Center is currently licensed to provide services to children between the ages of 2.9 years through 6 years. The center is open from 7:30 am to 5:30 pm Monday through Friday, on a year-round basis. The enrollment priorities are as follows: students, faculty/staff, and community. The Fitchburg State College Child Development Center is managed by Associated Children's Services, Inc., a private agency. The program is also a training site for students of the College in Early Childhood Education Teacher Training. For more information about the program, call 343-9149. Carol and Vincent Pellecchia are the Executive Directors.

Beyond the Classroom: Student Life

At Fitchburg State College, human development extends beyond the classroom and into the total campus environment. The College offers a variety of avenues for self-discovery and expression. It encourages the maturation of the individual and the group—emotionally, physically, socially, and spiritually—through co-curricular activities.

Fitchburg State students who choose to become active in campus life, accepting new commitments and added responsibilities, often find the avenues which will direct them toward their career and other life goals. They develop significant, helpful, enduring relationships with faculty, administrators, and other students, thus establishing a support network which will help sustain them in the years to come.

New Student Orientation

The orientation program at Fitchburg State College is designed to assist students in making the transition from high school to college. Built on a concept of "Student Development" the orientation program addresses the new students' needs from a holistic point of view, taking into consideration the intellectual, emotional, physical, social, and spiritual dimensions of the student.

Coordinated by the Student Affairs Office, the program is divided into two segments. The first part focuses on testing, academic advising and registration for classes. The second consists of a variety of programs and activities designed to make students aware of the broad range of services available to them, to introduce students to campus life, and to help develop a feeling and identity with Fitchburg State College.

Complementing the orientation program for students is the Parents Orientation program geared to providing the parents of students with valuable information about the College, as well as tips for easing students' and parents' transition to FSC.

Typically, the New Student Orientation program is scheduled during June, with additional programs during the first week of the school year. All new students and transfer students are expected to attend and receive appropriate materials well in advance of the scheduled program.

Residence Life

On-Campus Housing

On-campus students have an opportunity to choose from a variety of living environments. Whether their living preference be traditional, high-rise, or apartment-style, students will find other residents with a variety of interests and backgrounds. These living/learning centers are a major focal point of campus activity.

Aubuchon Hall is an eleven story high-rise, housing approximately 380 students. Each floor has a kitchen, laundry, lounge, and study area. *Russell Towers* opened in 1971 and is comprised of thirty-six suites, divided among three towers. Through its suite arrangement, *Russell Towers* encourages the development of strong community relationships among its residents. *Herlihy Hall* is very popular with returning students. This facility accommodates 142 students over three floors. *The Townhouses* contain 33 apartments for upperclass students. Every apartment is equipped with a combination livingroom/kitchen area, one and one-half baths, and individual bedrooms for each resident. Unlike all other on-campus

residents, students residing in the *Townhouses* are not required to be on the college meal plan, but do have the option to purchase one. Our newest residence hall complex opened in 1989. The *New Halls* consist of seven buildings, housing 328 students. This specially designed complex is tailored for students desiring a nontraditional, close-knit living arrangement.

Accommodations for disabled students are located in both the *Townhouses* and the *New Halls* complex. Annually, residence hall space is in high demand. Students desiring housing are advised to apply for admission-with-housing. Additional questions concerning on-campus housing should be directed to the Office of Residence Life, Aubuchon Hall (508/345-2151, ext. 3219 or 3235). Resident students may have vehicles on campus if requested.

Each residence hall is supervised by a full-time professional Residence Director (R.D.) and several student Resident Assistants (R.A.'s). These individuals serve students as advisors, educational programmers, building managers, and resource/ referral aides.

Off-Campus Housing

Some of the students at Fitchburg State College do not live in on-campus residences, but in apartments or rooming houses in the campus area. The campus is convenient to supermarkets, laundry facilities, and shopping centers. Students living off campus participate in all campus activities, and have their own governing body, the Commuter's Board.

The Office of Residence Life maintains a listing of rental units available within the campus area and offers assistance to students who wish to share apartments with other students. The Office of Residence Life is located in Aubuchon Hall.

Educational, Cultural, and Social Programs

Campus Center/Student Activities

The Student Activities component of the department is organized to advise and assist students, student organizations and their advisors about methods and materials they may use to create, organize and implement their programs. The office maintains files, information and resources about the college's student organizations and the multitude of program opportunities available to them.

Campus Center/Student Activities Department provides and/or assists with the presentation of a diverse co-curricular program of educational, social, and recreational activities for the college community. Additionally, a number of students familiar with student organizations and experienced in presentation programs implement activities and assist student organizations. They provide valuable assistance with campus films, lecturers, performing arts, visual arts, volunteer groups, and financial planning.

With the support and commitment of the faculty and members of the administration, a variety of workshops are offered. These focus on emerging leaders and opportunities for experienced officers to improve their leadership skills.

The Hammond Building's Campus Center is a haven for commuter and resident students alike who regard it as a unifying force on the Fitchburg State College campus. The Center is organized to meet the co-curricular needs of the college community and dedicated to fostering and promoting its spirit by providing opportunities for positive human development through the social, cultural, and recreational programs it offers, and by the convenient and economical services it administers.

Some of the programs and services generated from the Campus Center funds are a weekly calendar of student activities, mini-courses in arts and crafts, recreational tournaments, film, lectures and demonstrations, video-taped entertainment, performing arts, outdoor activities and free access to outdoor recreational equipment, visual art exhibitions and a van for student organizations.

Student Organizations

Student Government Association (S.G.A.)

The purpose of the Student Government Association as set forth in its constitution is:

". . .to be the democratic ruling body for and by the students, whose main goals are to unite the student body and address their various needs; to secure and defend the rights and freedoms necessary for our full participation in the educational process; to ensure the civil rights of the membership; to be a voice for the student body to the faculty, administration, and the community at large."

All students enrolled as full-time undergraduates are members of the Student Government Association, by virtue of having paid the activity fee. The governing body of S.G.A. is the S.G.A. Council, which is comprised of an Executive Board, a Programming Board, a Commuter's Board, Residence Hall presidents and vice-presidents, and four representatives from each of the classes. Elections are held every spring for the upperclass members, and in the fall for freshmen.

The S.G.A. is the official voice of the students and participates in campus-wide committees and state and national student organizations; in addition, its standing and ad hoc committees are a vital force in campus affairs. Its Programs Committee, for example, works with the Campus Center Office, and other student organizations to provide many of the activities for the College. Its various subcommittees are responsible for such events as the regular presentation of feature films in the Campus Cinema, the engagement of entertainment for the pub and coffee house, and various concerts, lectures, and seminars.

The S.G.A. offers a number of services to its membership including programming, photo copying, and legal advice. Student participation on any organizational level is welcomed and encouraged.

Clubs, Fraternities, Sororities, and Other Groups

The College encourages participation in all its student organizations; through these laboratories for expression, students can develop skills which will last a lifetime. A multitude of organizations, encompassing a broad spectrum of interests, operates on campus, offering the student many options. Membership in college clubs and organizations is generally open to all F.S.C. students; for meeting times and locations, contact the Campus Center/Student Activities Scheduling Office. A list of the organizations on campus includes:

Academic Honor Societies

National

Omicron Delta Epsilon (Economics)
Kappa Delti Pi (Education)
Phi Alpha Theta (History)
Epsilon Pi Tau (Industrial Technology)
Sigma Theta Tau (Nursing)
Psi Chi (Psychology)

Local

Communications/Media Honor Society
English Honor Society

Academic Interest Groups

Accounting Society
Associated Builders & Contractors
Biology Club
Communications/Media Club
Communications/Media Honors Society

Computer Science Club
Early Childhood Club
Economics Club
English Club
Fitchburg Industrial Technology Association
Geography Club
Honors Club
Human Services Club
Marketing Club
Medical Tech. Club
Nursing Student Association

Psychology Club
Society for Advancement of Management
Sociology Club
Special Education Club

Fraternities

Esoteric Society
Iota Phi Theta
Sigma Pi
Sigma Tau Gamma
Phi Beta Sigma

Sororities

Adelphian Society
Neasylon Society
Zeta Phi Beta
Phi Sigma Sigma
Tokalon Society

Residence Hall Government

Aubuchon Hall Council
Herlihy Hall Council
Inter-Hall Council
New Halls Council
Russell Towers Association
Townhouse Board of Governors

FSC Student Government

Commuter's Board
SGA Council
SGA Class of 1997
SGA Class of 1996
SGA Class of 1995

Special Interest Groups

Amnesty International
Radio Amateur Radio Club
Black Student Union
Dancing Club
FSC Band
FSC Falcon Players
FSC First Response Team
Gay, Lesbian and Bisexual Alliance
Hispanic Student Union
International Student Union
Inter Fraternity Sorority Council
Intervarsity Christian Fellowship
Jewish Student Union
Karate Club
L. M. Perlstein Co. (ROTC)
Legal Association Amateur
MARS (Mature and Returning
Masspirg
Outing Club
Programs Committee
SAVE (Students Against Violent Encounters)
SAXIFRAGE (Yearbook)
SCRIMSHAW (Literary Magazine)
STROBE (Newspaper)
Student Alumni Relations
Student Ambassadors (Tour Guides)
WXPL Radio - 91.3 FM

Smart Choices/Substance Awareness

The Smart Choices Program is funded through a two year Fund for the Improvement of Postsecondary Education (FISPE) alcohol and other drug education grant. Smart Choices programs are coordinated by the Substance Awareness Office, located in room 217 of the Sanders Administration Building.

The goals of the Smart Choices Programs are focused in three areas. These areas are: 1. prevention—stopping future problems through education, 2. intervention—changing current campus environmental norms through education, assessment and consistent response to alcohol and other drug problems, and 3. expansion—creating alternative activities/events and stimulating student interest in more healthy areas. To promote each of these goals, the Smart Choices campaign works with the entire campus community including students, faculty and staff. This approach changes the focus of substance abuse as a student issue and reframes it to a bigger campus issue. The following is a breakdown of the programs according to the involved campus population.

Students are involved in the Smart Choices Program through increased representation on campus-wide committees, and through a peer alcohol and other drug education group, and a student theater group.

Faculty are involved in the Smart Choices Program through a curriculum infusion project. This project encourages faculty members to include substance information in their classroom subject area. Faculty are also asked to be a part of the Substance Awareness Task Force and other committees that address substance issues.

Administratively, the Smart Choices Program promotes collaborative educating and training efforts among college departments.

More information about Smart Choices Programs can be obtained by calling extension 3131 and speaking with the Substance Awareness Coordinator.

Musical Groups

Fitchburg State College offers a variety of musical programs for both the participant and the music lover. The College has a fine 60-piece Concert Band that performs music of all types, from the transcriptions of classics to contemporary sounds. The Jazz-Rock Ensemble features big band, jazz, rock, and experimental music for stage bands. Opportunities for small ensemble participation exist whenever instrumentalists are available; smaller groups have included brass, woodwind, and recorder ensembles. For vocalists, the FSC Choir provides an opportunity to sing a wide selection of mixed-voice choral pieces.

Religious Life

Many churches, synagogues, and other religious congregations are located within walking distance of the campus. In addition, the Newman Center Student Parish, whose modern Center was built with the help of Fitchburg State Industrial Arts students, provides a spiritual and social gathering place for many students. The Center, which hosts many student functions throughout the academic year, is located on Highland Avenue, adjacent to the College.

Intercollegiate and Intramural Sports

The Department of Athletics at Fitchburg State College, supported by the Athletic Fee, offers each student an opportunity to participate in activities at the varsity, intramural, and recreational levels in order to develop the person first, the student second, the athlete third, and the champion fourth.

Intercollegiate

The 16 Falcon varsity teams have enjoyed national and regional recognition as highly competitive NCAA Division III teams. Fitchburg State is a member of 10 intercollegiate Athletic Associations which entitles successful teams to participate in tournament and championship play. FSC is a charter member of the Massachusetts State College Athletic Conference (MASCAC), which includes seven other state colleges.

The men's varsity programs include competition in cross-country, indoor track and field, outdoor track and field, football, soccer, basketball, hockey, and baseball. Women's programs include cross-country, indoor track and field, outdoor track and field, field hockey, volleyball, basketball, softball and soccer.

The Fall season involves football, soccer, field hockey, volleyball, and cross-country. Competition begins soon after school starts in early September and runs to early November.

The hockey, basketball and indoor track teams compete during the Winter season. Practice sessions start in late October or early November. The season of competition usually runs from late November to early March.

The Spring season includes track and field, baseball, and softball. Practice for baseball and softball starts early in February. The season of competition runs from late March through early May. The baseball and softball teams often travel to Florida during spring break. The track and field season begins immediately following indoor track.

Information regarding pre-season tryouts and team meetings is available in the Athletic Office and by notices posted throughout the college community.

For the purpose of athletic eligibility "satisfactory progress toward a baccalaureate" shall be defined as successful completion by students of 24 semester hours of course work prior to entering their third full-time semester; 48 semester hours of course work prior to entering their fifth full-time semester; and 72 semester hours of course work prior to entering their seventh full-time semester. Full or part-time status shall be determined by the end of the ADD/DROP period. See Academic Section for academic requirements. In addition to Fitchburg State College academic requirements, students must meet the requirements of the NCAA, ECAC and MASCAC.

Intramural

An active intramural program offers the opportunity for all students to participate in a wide range of activities. Student involvement plays a large part in the success of the program, the goals of which are fair play, cooperation, fun, and enjoyment. Competition is offered in such sports as co-ed volleyball, street hockey, basketball, flag football, soccer, 3 on 3 basketball, frisbee, and softball.

Intramural notices are posted around campus throughout the year by the Director of Intramurals. Sign-up sheets are available at the Department of Athletics.

Open gym and open weight room time is available on a daily basis for student use. Hours are posted on the bulletin boards located at the Athletic Office and in the gymnasium foyer.

The Fitchburg State College Intramural Council is a student-run organization which helps promote and administer the various sports and activities, aiding the Department of Athletics in encouraging student involvement and in promoting its goal of leadership development. All activities attempt to reflect the interests and needs of the entire College Community.

Student Code of Conduct and Judicial System

The philosophy behind the Student Code of Conduct and Judicial System at Fitchburg State College is that student conduct is a personal responsibility. The Student Code of Conduct and Judicial System was developed as a cooperative effort among students, faculty, and staff in order to provide a listing of College regulations and sanctions and to establish fair processes for dealing with instances of student misconduct. Central to the Judicial System is the Judicial Board comprised of students, faculty, and administration.

College regulations apply on campus, off campus and at all College sponsored affairs, wherever they might take place. These regulations include federal, state, and local laws, as well as rules and regulations conducive to the attainment of the goals of the College. The following list, while by no means exhaustive, gives examples of areas covered by the Student Code of Conduct: academic dishonesty, false representation, tampering with College records, theft, vandalism or intentional destruction of College property, harassment, physical assaults, possession and/or consumption of alcoholic beverages or controlled substances in violation of College guidelines, and possession and/or use of firearms. The complete text of the Student Code of Conduct and Judicial System is found in the Student Handbook which is available at the Student Affairs Office.

Students who have been placed on Strict Disciplinary Probation, Deferred Suspension or who have been **Suspended** or **Dismissed** will not be allowed to serve on campus representative committees, hold appointed or elected campus-wide office, or be a member of any intercollegiate athletic team.

Good Neighbor Policy

Students who reside in or visit the College neighborhood are expected, as members of the FSC Community, to demonstrate respect and concern for all members of the local community. As such, FSC expects students to demonstrate responsible citizenship in the local neighborhood. Several community service opportunities exist for students. Contact the Campus Center/Student Activities Office for more information.

To support the goal of being "good neighbors," the following behaviors will not be tolerated: excessive or unreasonable noise, sponsoring parties for profit (the illegal sale or distribution of alcoholic beverages which may include the use of tickets, tee-shirts, mugs, cups and/or any other items as a price or condition of admission), sponsoring excessively large parties, serving minors, disorderly conduct, public drinking, use, sale or distribution of illegal drugs, harassment of neighbors, defacing or damaging property, interfering with the City of Fitchburg Police or utility agencies in the performance of their duties, public urination, throwing objects out of apartment windows and the use, sale, manufacturing or distribution of fake I.D.'s.

FSC students may be charged through the Student Judicial System for misconduct which arises off-campus if the student is in violation of federal, state or local laws or College policy that brings into question one's suitability as a member of the College community. If found responsible, students would be subject to sanctions up to and including loss of residence or suspension or dismissal from the College.

Faculty

Faculty

ADAMS, Roberta E.
BA University of Michigan
MA Indiana University
MA University of Massachusetts
PhD Indiana University
Associate Professor, English. 1988

ADDORISIO, Rose Ann
BSEd Fitchburg State College
MEd Fitchburg State College
Assistant Professor, McKay Campus School. 1969

ALBERGHENE, Janice M.
BA University of Massachusetts
PhD Brown University
Associate Professor, English. 1988

ALONSO, Harriet Hyman
BS New York University
MA New York University
MA Sarah Lawrence College
PhD State University of New York at Stony Brook
Associate Professor, History. 1989

ANDERSON, Neal
AB University of Utah
MS University of Utah
PhD Cornell.
Professor, Biology. 1970

ANDREWS, James
BSEd Fitchburg State College
MEd Fitchburg State College
CAGS University of Connecticut
Assistant Professor, Industrial Technology. 1975

ANTAYA, David
BS University of Massachusetts
MA University of No. Colorado
Assistant Professor, Physical Education. 1981

ANTTILA, Faith
Massachusetts Professional Librarian Certificate
Library Associate. 1966

ARCHAMBEAULT, Frank
BS Worcester Polytechnic Institute
MS Worcester Polytechnic Institute
MS Worcester State College
Assistant Professor, Computer Science. 1986

ARES, Henry
BA University of Moncton (Canada)
MEd Fitchburg State College
Assistant Professor, McKay Campus School. 1970

ARMSTRONG, Edward T.
BS Pennsylvania State University
MS Louisiana State University
Associate Professor, Biology. 1988

ARYEE, Augustine
BA Northeastern University
MA Northeastern University
PhD Boston University
Professor, Sociology. 1982

AUSTIN, Sandra
BSN University of Virginia
MSN University of California
Instructor, Nursing. 1989

BABICH, George
AB Atlantic Union College
MS Loma Linda University
MS University of New Hampshire
PhD University of New Hampshire
Professor, Biology. 1978

BARBARESI, Patricia
BSEd Fitchburg State Teachers College
MA University of Connecticut
CAGS Boston College
PhD Cornell University
Professor, Education. 1965

BARBATO, James
AB Assumption College
MA Clark University
PhD Boston University
Professor, Geography. 1972

BARKER, William
AB Boston University
MA Brandeis University
PhD Brandeis University
Professor, English. 1971

BATTINELLI, Thomas
AA Boston University
BS Boston University
MEd Boston College
CAGS Boston University
EdD Boston University
Chairperson and Professor, Physical Education. 1960

BECHIS, Donna
BFA Hunter College
MFA University of Pennsylvania
Professor, Art. 1974

BENTLEY, Robert
BA Wayne State University
MA Wayne State University
Assistant Professor, Mathematics. 1977

BERNSTEIN, Alan
BA Hofstra University
MA University of New Hampshire
PhD Tufts University
Professor, Psychology. 1969

BISK, Richard
BA Drew University
MS University of New Hampshire
ASA Society of Actuaries
PhD Clark University
Professor, Mathematics. 1982

BLAKE, Simone E.
BA Fitchburg State College
MS Simmons College
Assistant Librarian, Library. 1991

BOHRER, George F.
BA SUNY at Fredonia
MAT Keene State College
PhD University of Massachusetts
Professor, Communications/Media. 1985

BOISVERT, Dorothy
BS Merrimack College
MEd University of Lowell
CAGS University of Lowell
EdD University of Massachusetts, Lowell
Associate Professor, Medical Technology. 1983

BOND, George
AB Dartmouth College
MS University of Rhode Island
PhD University of Rhode Island
Professor, Biology. 1973

BOURN, Colin
AB St. Michael's College
MEd Fitchburg State College
MA University of Massachusetts
Associate Professor, English. 1965

BREEN, G. Jefferson
AB Clark University
MA Clark University
EdD Clark University
Professor, Psychology. 1971

BROWNLEE, Sibyl Ventrress
BA California State College at LA
MA California State University at LA
Instructor, History. 1993

BUCHOLC, Stanley
BA Glassboro State College
MA W. Virginia University
EdD W. Virginia University
Chairperson and Associate Professor, Industrial Technology. 1976

BUDZ, Judith
BA University of Michigan
MA Tufts University
MBA Clark University
PhD Northwestern University
Professor, English. 1974

BURKE, John
AB Boston College
AM Fordham University
MA University of New Hampshire
PhD Brown University
Professor, Russian and German. 1969

CAGGIANO, Diane P.
AA Cape Cod Community College
BS Babson College
MBA Babson College
Assistant Professor, Business Administration. 1983

CAMMUSO, Barbara
AS Quinsigamond Community College
BSN Worcester State College
MSN University of Lowell
PhD Dunsbuch University
PhD Clark University
Assistant Professor, Nursing. 1992

CAREY, David A.
BA St. Michael's College
MS University of Massachusetts
MBA Anna Maria College
Assistant Professor, Business Administration. 1980

CASE, George
BA College of Wooster
MA University of Massachusetts
Assistant Professor, English. 1964

CATALANO, Anne Marie
BS State University of New York
MS Boston University
Instructor, Nursing. 1992

CHAMPLIN, Robert.
BS Bridgewater State College
EdM Boston University
PhD Ohio State University
Chairperson and Professor, Geography. 1972

CHAPMAN, Joanne
BS Boston University
MS University of Lowell
Instructor, Nursing. 1991

CHARLAND, Sylvia
BS University of Massachusetts MBA University of Massachusetts
Assistant Professor, Business Administration. 1984

CHISUNKA, Chola
BA University of Zambia
MA Syracuse University
PhD Syracuse University
Assistant Professor, English, 1991

CHOU, Feng Z.
BA Natl Chung-Hsing University (Republic of China)
MPA University of West Florida
MA Syracuse University
PhD Syracuse University
Associate Professor, Political Science. 1988

CIOTTONE, Judith L.
BS College of St. Elizabeth
MA Clark University
PhD Clark University
Chairperson and Professor, Chemistry. 1982

CLARK, Robert W.
AB Brown University
MEd State College at Bridgewater
MA Rutgers University
Assistant Professor, Mathematics. 1967

COFFMAN, Ralph J.
BA Trinity College
EdM Boston University
MS Simmons College
M Div Andover Newton Theological School
PhD Harvard University
Assistant Professor, History. 1991

COLBERT, James, Jr.
BA Lateran University, Rome, Italy
MA University of Barcelona, Spain PhD University of Navarre, Pamplona, Spain
Professor, Philosophy. 1982

COLBERT, Ronald
BSEd Fitchburg State College
EdD Boston University
MEd Fitchburg State College
Associate Professor, Education. 1989

COLLUCCINI, John D.
BS University of Lowell
MS University of Lowell
Assistant Professor, Industrial Technology. 1991

CONE, Linda
BA Fitchburg State College
MLS University of Rhode Island
MEd Fitchburg State College
Librarian. 1980

CONLIN, James
BA Dartmouth College
MBA University of Pennsylvania
Assistant Professor, Business Administration. 1982

COSGROVE, Christine
AB Mt. Holyoke College
MS Georgetown University
PhD Georgetown University
Professor, Mathematics. 1971

COX, Howard B.
BA University of Rhode Island
MBA Harvard University
PhD The Ohio State University
Chairperson and Professor, Business Administration. 1988

CUNNINGHAM, Lee N.
BS Springfield College
MEd University of Massachusetts
DPE Springfield College
Professor, Physical Education. 1967

CUSACK, Martin
AS Bentley College
BBA Northeastern University
MS Bentley College
CPA
Associate Professor, Business Administration. 1982

DECHENE, Lucy I.
BS University of San Francisco
MS University of California at Riverside
PhD University of California at Riverside
Associate Professor, Mathematics. 1978

DENIKE, Lee
BA State University of N.Y. at Albany
MA State University of N.Y. at Albany
MEd State University of N.Y. at Buffalo
PhD Kent State University
Professor, Communications/Media. 1974

DEROSA, Laurie J.
BA Bridgewater State University
MA University of Massachusetts
Assistant Professor, McKay Campus School. 1989

DICK, Stanley
AB Brooklyn College
MA Harvard University
PhD Harvard University
Professor, Biology. 1971

DINDA, Robin D.
AB Davidson College
MMus University of Cincinnati
DMA University of Michigan
Assistant Professor, Music. 1991

DOBRIAN, Amy
AB Dartmouth College
MA University of Iowa
MFA University of Iowa
Assistant Professor, Art. 1992

DOWNEY, Joyce
BS Bridgewater State College
EdM Boston University
Associate Professor,
Physical Education. 1968

ERRISHI, Ali
BA University of Benghazi
MAS University of Benghazi
PhD Boston College
Associate Professor, Philosophy and Physics. 1988

FANDREYER, Ernest
MA MSC University of Bonn
MS Marquette University
EdD Boston University
Professor, Mathematics. 1968

FERRARA, Judith
BS State University College at Buffalo
MEd Fitchburg State College
CAGS Boston University
Associate Professor, Education. 1971

FINKEL, Joseph
AB University of Massachusetts
AM University of Chicago
Assistant Professor, English. 1969

FISK, Elizabeth Anne
BSEd Fitchburg State College
MSN Boston University
MOE University of New Hampshire
Associate Professor, Nursing. 1978

FISKE, Jane
BM New England Conservatory
MM New England Conservatory
Assistant Professor, Music. 1989

FLIPPO, Rona F.
BS Florida Atlantic University
MEd University of North Florida
EdS University of Florida
EdD University of Florida
Professor, Education. 1986

FLORIO, Rita T.
BS Fitchburg State College
MS University of Massachusetts
Instructor, Nursing Department. 1993

FLYNN, Katherine
BSEd Fitchburg State Teachers College
MEd Fitchburg State Teachers College
CAGS University of Connecticut
Professor, Special Education. 1959

FRANCIS, Elaine E.
BSEd Fitchburg State College
MS Lesley College
EdD University of Massachusetts
Professor, Special Education. 1978

FREDETTE, Norman
BS University of Massachusetts
MEd Harvard University
EdD University of Massachusetts
Professor, Geo/Physical Sciences. 1967

FREDETTE, Sheila
BSEd Fitchburg State Teachers College
MS University of Massachusetts
EdD University of Massachusetts
Professor, Nursing. 1974

FREEBURG, Donald
BS Pennsylvania State University
MA Bowdoin College
Assistant Professor, Mathematics. 1965

GARDULA, Robert
BS Bridgewater State College
MA Clark University
PhD Clark University
Professor, Geography. 1973

GARVIN, E. Arthur
AB Antioch College
MS Tulane University
PhD Washington University
Professor, Psychology. 1967

GAUMOND, John
BS Worcester State College
MEd Worcester State College
MA Syracuse University
Associate Professor,
McKay Campus School. 1969

GAY, Carol
BA University of Chicago
PhD Washington University
Professor, Psychology. 1977

GERECKE, Lillian
BS Simmons College
EdM Fitchburg State College
MS Simmons College
Librarian. 1970

GILBERT, Carol
BSN University of Pennsylvania
MSN University of Pennsylvania
PhD University of Michigan
Professor, Nursing. 1989

GIOVINO, Rosemarie
BSEd Lowell State College
EdM Boston University
EdD Boston University
Professor, Special Education. 1972

GIRLING, Paul
AB Ottawa University
BD Andover Newton Theological School
STM Andover Newton Theological School
MA University of No. Colorado
EdD University of No. Colorado
Professor, Psychology. 1968

GLIDEWELL, Richard
BA Northern Illinois University
MA Northern Illinois University
PhD Southern Illinois University
Professor, Philosophy. 1973

GORDENSTEIN, Arnold
BA University of Massachusetts
PhD Harvard University
Associate Professor, English. 1989

GRANT, Daniel
BS Fitchburg State College
MEd Rhode Island College
Instructor, Industrial Technology. 1989

GREENE, Robert W.
BSEd Worcester State Teachers College
MEd Northeastern University
PhD University of Connecticut
Associate Professor, Education. 1960

GREENE, Jeremiah E. Jr.
AB Maryknoll Seminary College
MS Simmons College
Associate Librarian. 1980

GRIFFIN, Richard
BA Morehouse College
MLS Atlantic University
Associate Librarian. 1989

GUTH, Lawrence R.
BS Michigan Technological University
MS University of Utah
PhD Rice University
Assistant Professor, Geo/Physical Science. 1993

HANLEY, Mary Ann
BA College of St. Catherine
MEd California State College
EdD Boston University
Chairperson and Professor, Psychology. 1974

HARRELL, Sophia
BSN Winston-Salem State College
MS Boston University
MA Assumption College
EdD University of Massachusetts
Associate Professor, Nursing. 1970

HARRIS, Irene
AB Oberlin College
MS Columbia University
MEd Boston University
PhD Boston University
Chairperson and Professor, English. 1983

HARTE, Lloyd M.
BSEd Fitchburg State College
MEd Fitchburg State College
EdD University of Massachusetts
Associate Professor, Industrial Technology. 1978

HAYES, Patricia
BA Simmons College
MA Northeastern University
PhD Northeastern University
Associate Professor, Sociology. 1973

HETZEL, Charles
BA Beloit College
MS University of Wisconsin
PhD University of Wisconsin
Associate Professor, Education. 1987

HIGDON, Gerald
AB Villa Madonna College
MA University of Kentucky
PhD Lehigh University
MBA Northeastern University
Chairperson and Associate Professor, Mathematics. 1977

HOEY, Margaret T.
BS Emory University
PhD University of North Carolina
Assistant Professor, Biology. 1993

HOFFMAN, Elliot
BA Middlebury College
MS Boston University
Assistant Professor,
Communications/Media 1986

HOGAN, Peter
BA University of Wales, U.K.
PhD University of Bradford, U.K.
Professor, Psychology. 1982

HOOS, Gunther
BA Lawrence University
Assistant Professor, Communications/
Media. 1980

HOTCHKISS, Anita
BA City University of New York
PhD Hunter College of
City University of New York
Professor, Psychology. 1981

HOUSE, Bonnie
BFA Kutztown University
MFA Rochester Institute of
Technology
Associate Professor,
Communications/Media. 1987

HOWARD, Anne
BS University of Connecticut
MEd Boston College
PhD Brandeis University
Assistant Professor,
Special Education. 1992

HUMPHREYS, Catherine
BS Fitchburg State College
MS Boston College
Associate Professor, Nursing. 1981

JARAMILLO, Maria
BA Universidad del Valle
MA Syracuse University
PhD Syracuse Univeristy
Associate Professor, Spanish. 1986

JEFFKO, Walter
BS University of Bridgeport
MA Fordham University
PhD Fordham University
Professor, Philosophy. 1970

JELLISON, James
BS Northeastern University
MEd Fitchburg State College
Associate Professor,
McKay Campus School. 1972

JOHNSON, Gerald R.
BS University of Massachusetts
MS Purdue University
Associate Professor,
Computer Science. 1979.

KAUL, Pushkar N.
BS Kashmir University
MS Aligarh University
PhD Boston College
Associate Professor, Chemistry, 1985

KAUL, Sanjay
BS University of Jammu
MS University of Jammu
MS University of Pennsylvania
PhD Indian Institute of Technology
Assistant Professor, Industrial
Technology. 1991

KELLEHER, Robert
AB Syracuse University
MBA University of Detroit
Assistant Professor,
Business Administration. 1983

KELLY, Nancy
PhB Wayne State University
MAT Fitchburg State College
PhD University of Massachusetts
Assistant Professor, English. 1992

KEMPERS, Margot
BA Brandeis University
MA Stanford University
PhD Brandeis University
Associate Professor, Sociology. 1986

KEOUGH, William
AB Harvard University MA
Iowa University MFA
Iowa University
PhD University of Massachusetts
Professor, English. 1969

KIMMEL, Allan
BA University of Maryland
MA Temple University
PhD Temple University
Professor, Psychology. 1986

KING, Mary A
BSEd Worcester State College
MA Anna Maria College
CAGS Anna Maria College
EdD University of Massachusetts
Professor, Human Services. 1980

KOKERNAK, Robert
BS Worcester Polytechnic Institute
MS Stanford University
PhD Worcester Polytechnic Institute
Professor, Industrial Technology.
1974

KOLB, Liana
AB Douglas College
BSEd Fitchburg State College
MS Simmons College
MEd Boston University
Assistant Professor,
McKay Campus School. 1971

KOZIARA, Richard J.
BS Texas Lutheran College
Associate Professor
Military Science. 1993

KRANE, Stanley
BS City College of New York
MS Michigan State University
PhD California Institute
of Technology
Professor, Biology. 1975

KRUCZEK, Elizabeth
BS in Ed Boston University
MEd Worcester State College
Athletic Director and Assistant
Professor, Physical Education.
1966

KRUSE, Richard
BA Dennison University
MEd Boston University
MEd Cambridge College
CAGS Boston University
Assistant Professor, Psychology.
1967

KYLE, Elena
BA Clark University
MA Clark University
MAEd Clark University
EdD Boston University
Assistant Professor, Communications/
Media. 1988

LACOY, Jacqueline
BA Worcester State College
MS Boston University
Associate Professor,
Communications/Media. 1985

LANDER, Frits
Academy Engineer
Engineering Academy of Denmark
Associate Professor, Computer
Science. 1982

LAYTIN, Peter
BA University of Wisconsin
MA State University of New York at
Buffalo
Professor, Communications/Media.
1977

LEE, Robert R.
BS University of San Francisco
MA San Francisco State College
DEd Harvard University
Professor, Education. 1970

LIEBERMAN, Benjamin
BA Yale University
MA University of Chicago
PhD University of Chicago
Assisant Professor, History. 1993

LIGHT, Barry
BA Lebanon Valley College
MA Louisiana State University
EdD Pennsylvania State University
Professor, Mathematics. 1973

LOCICERO, Alice
BA College of St. Elizabeth
PhD Catholic University
Assistant Professor,
Behavioral Sciences. 1993

LORENZEN, Louis
BSEd Bowling Green State
University
MEd Bridgewater State College
MATFA Assumption College
MFA Syracuse University
Professor, Art. 1965

LU, Da-hong
Diploma, University of Science and
Technology of Shanghai, China
PhD Wayne State University
Associate Professor, Chemistry. 1991

LWAMUGIRA, Pirudas L.
BA University of East Africa
MBA St. Joseph's University
PhD Temple University
Assistant Professor, Economics. 1991

McALOON, Joseph
BA University of New Hampshire
MBA University of South Dakota
MSPA University of Massachusetts
Associate Professor, Business
Administration. 1984

McANDREW, Claire
BA Marywood College
MA Georgetown University
EdD Lehigh University
Associate Professor,
Mathematics. 1983

McCAFFREY, Marilyn
B Ed Rhode Island College of
Education
MA Brown University
EdD Boston University
Professor, English. 1971

McGRAIL, John
AB Holy Cross College
AM Boston College
Associate Professor, English. 1963

McGUIRE, Robert
BA St. John Fisher College
MS University of Kentucky
PhD University of Rochester School of Medicine and Dentistry
Professor, Computer Sciences. 1982

McKAY, Linda
BSN St. Anselm's College
MS Russell Sage
Assistant Professor, Nursing. 1981

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Staff Assistant, Facilities. 1985

Academic Glossary

Baccalaureate The Bachelor's Degree; traditional first step on the ladder of higher education. It is characterized by a four year program which blends courses aimed at promoting the acquisition of broad knowledge through a solid foundation in the Liberal Arts and Sciences as well as courses designed to give depth of understanding in the major field.

Carnegie Unit The unit of work expected of students for each college credit. The College expects students to spend 45 hours of work for each credit. The most common break down for one credit is one hour of class work and two hours of homework for fifteen weeks each semester. A three-credit course demands nine hours of work each week.

CLEP The College Level Examination Program by which up to 60 semester hours of credit may be earned towards degree. For details, see, "Alternative Programs."

Credits Arithmetic representation of the value of completed course work towards the degree requirements. One classroom hour and two hours of homework for the nominal fifteen-week semester usually counts for one credit. As the usual course responsibility requires three classroom hours per week, per semester, and six hours of work per week outside the classroom, the normal yield per course is three credits. Tradition and practice in the case of laboratory, studio, shop, and other practica awards proportional credit for hours of attendance.

Department An administrative subdivision of the faculty. Sometimes the department is identical with a discipline category such as English or Mathematics. Departments such as Behavioral Sciences, Humanities, and Social Sciences represent an association of faculty members of related disciplines.

Electives Those course selections by the candidate which are not predetermined by graduation, major, or minor requirements.

Liberal Arts and Sciences Befitting the Baccalaureate tradition and current practice, the Fitchburg State College candidate is required to complete a minimum of 60 credits in a distribution of clusters across the liberal arts disciplines at the College. For details, see, "Liberal Arts and Sciences Program."

Major That structured experience in an academic field which constitutes the candidate's specialization. All degree programs require a major. As considerable variation exists as to prerequisites and total credits, the candidate must carefully study the structure of the major of her/his choice. For details of major requirements, see, "Courses and Programs..."

Minor That structured experience in a related discipline/field which is recognized by the major department as supportive of the candidate's specialization. Minors are defined by the Academic Department offering them. As considerable variation in requirements exist, the candidate should study carefully the minor offerings, see, "Courses and Programs..."

Prerequisite Those courses which must be satisfactorily completed before admission to certain other courses. Prerequisite courses are listed in the course description of the course requiring them. Again, see, "Courses and Programs..."

Program That construct of General Education, major, minor, and/or professional courses which satisfies the requirements for a particular degree.

Self-Help Self-Help is in the form of loans and work.

Track That subdivision of academic programs which constitutes a unit of professional competence. Suggestive of the complexity of identifications involved in only one department, consider the example of Business Administration. This program includes tracks in Accounting, Management, and Marketing. The candidate should clarify

with his/her advisor and major department the track which he/she is interested in pursuing.

Waiver of Regulations Recognizing the inappropriateness of rigidity in endeavors to promote its goals, the College provides for waiver procedure relative to its baccalaureate rules, regulations, and programs. All petitions for waiver of regulations begin with the Office of the Undergraduate Dean. The student should note that reasons for waiver must be as exceptional as the grant.

Parking Regulations

Parking facilities at Fitchburg State College are limited, but have been gradually expanded to over 1,000 spaces.

All vehicles utilizing the parking facilities must display the proper identification sticker. Stickers may be purchased at the Public Safety Office located in the Dupont Building. Visitors to the campus may obtain temporary parking permits from the Public Safety Office.

Resident students may have vehicles on campus if requested. These vehicles must have the proper sticker issued from the Public Safety Office and must use the designated college controlled lots for overnight parking and the city streets after 8 am during the week.

A booklet entitled *Motor Vehicle Regulations* with more specific information on vehicle and parking regulations, may be obtained from the Public Safety Office.

Animals on Campus

Due to health and safety considerations, no animals can be allowed on campus or in campus buildings at any time. The only exceptions are guide dogs and laboratory animals.

Massachusetts Trespass Act

Fitchburg State College is governed by the Massachusetts Trespass Act, enacted June 2, 1969.

Trespassing Upon the Land of Certain Institutions

Whoever willfully trespasses upon land or premises belonging to the Commonwealth or to any authority established by the general court for purposes incidental to higher education after notice from an officer of any said institutions to leave said land, remains thereon, shall be punished by a fine of not more than $50 or by imprisonment for not more than three months.

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